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AS TO RUBBER OVER PRODUCTION.

QUESTIONS continue to be asked as to the prospects of the over production of india-rubber, either in the near future or later. The question is a most natural one, and calculated to interest the owners of existing plantations and *seringaes* as well as persons who are being invited to invest in new rubber enterprises.

The subject divides itself under two headings—production and demand. It would be unreasonable to suppose that the production of rubber will not be increased very greatly during the next few years. The normal condition of the rubber business in the Amazon valley has been a yearly increase, steadily maintained even if not on a large scale. Each year sees the extension of rubber gathering to wider fields, and wherever new *estradas* are opened care is taken to conserve the trees. Undoubtedly large areas yet unworked will, under improved conditions, become more accessible than at present, while the number of *seringueiros* grows rather than decreases.

As pointed out in these pages many times, there are other regions where the production of forest rubber is on the decline, but there are yet untouched rubber resources in various parts of Africa and perhaps elsewhere, so that on the whole it seems that the world will

yet see a larger production of forest rubber in a single year before it sees less.

The question of over production, however, is asked more frequently in relation to the product of rubber plantations. Considering how rapid has been the development of plantation yields, it would be a simple matter to figure that with the same percentage of yearly increase the world's production of rubber would soon become doubled. Or, if all the plantations formed to date should become as productive as the best now matured, so much rubber might become available as to reduce prices below a profitable level.

Much will depend, however, upon the coming demand for rubber. From the beginning of the industry the market for rubber goods has grown constantly at a rate which has forced a larger production of the raw material, and presented the unusual situation of a raw product going up in price while being produced all the while on a larger scale. At no time have high prices of rubber lessened its consumption except temporarily, and it is possible that just as much rubber has been consumed in the world, from first to last, as if the cost had been only one-half or one-fourth of the prices actually paid for it. But the present price level cannot be looked forward to as permanent, since both plantation and forest rubber can be produced profitably, under favorable conditions, at much less than the present selling prices.

There are yet many people in the world who are not yet users of rubber in any shape, and many more people who are likely to add to the number of their present uses of rubber, so that the total consumption of this material seems likely to continue for a long time to come, and at a rate which seems to make unnecessary, at least for the present, any general fear of rubber over production.

One other point relates to the character of many of the more recent flotations of rubber plantation companies. It must be admitted that for all the capital stated to have been invested in the planting interest since the beginning of the year to yield profits would involve an enormous over production of rubber. But this we do not look for.

In the first place, the more successful of the old companies have been exceptionally well located, managed with skill and sound judgment, and conservatively capitalized. Now if a company less fortunate in the matter of location, management, and so on, should not yield satisfactory results, it is easy to see how it may be difficult after awhile to obtain needed financial support, and it is possible that some plantations once begun may be abandoned. It is more than probable that not a few projected plantations never will be started. It is to be pointed out furthermore that—

Not all of the companies floated in London or elsewhere in the name of rubber are for the purpose of creating or operating plantations. In a number of cases two companies are floated in respect of a single estate: (1) a syndicate to act as a "vendor company," after which it may cease to exist, and (2) the final or purchasing com-

pany. In such a case practically the same capital is mentioned twice.

Many of the new companies formed with a view rather to trading in rubber estates than to developing plantations, and in most cases no doubt but a small proportion of the capital authorized has been paid in. Even in case of the substantial productive companies as a rule not all of the authorized capital has been issued.

These reasons alone seem sufficient to indicate that not every new rubber company floated is bound to add to the world's production of rubber.

ANOTHER NEW RUBBER CONDITION.

ONE of the most interesting items in the rubber trade for some time past is the official announcement by the largest existing rubber manufacturing corporation of arrangements for the control, on a large scale, of sources of crude rubber, both forest and plantation. The amount of this company's consumption of rubber is nowhere stated, but it is several years since, in one of its annual reports, the sum of \$16,000,000 was mentioned as having been paid during a twelvemonth for crude rubber. It is common knowledge that the operations of the company are today on a much greater scale, and meanwhile the pound price for rubber has increased very greatly.

The fact that various projects for the purchase of rubber in primary markets by various manufacturers have not always resulted successfully is no argument against the wisdom of the new enterprise here referred to. Two of the most successful individual rubber manufacturers the United States have known were importers of Pará rubber on their own account something like a score of years ago, and the fact that they conducted business on this basis for a considerable period is evidence that they must have found some profit in so doing. It may be mentioned that while neither of these gentlemen is now living, the businesses which they founded are comprised in the larger company now announced to be acquiring control of forest rubber properties in the Amazon basin, and rubber plantations in the Far East.

This latter feature means a distinct departure from precedent. In other words, whereas comparatively small manufacturers formerly competed with other buyers in the open market at Pará, the new system involves absolute control of important rubber sources, without reference to rubber prices generally or the conditions of the rubber market in which other consumers cover their requirements.

Aside from the fact that the company referred to now control financial resources such as were unknown formerly in connection with any one concern in the rubber industry, various conditions have come about more favorable than in the past for a consumer desiring to become also a producer of raw material. It was only recently that extensive plantations of rubber, systematically conducted, have begun to produce largely, at a cost which

can be calculated closely in advance. Today importers in New York are buying rubber practically direct from plantations, and practically for account of individual customers, and it would be quite as easy for a large consumer to buy in Ceylon, for instance, and import on his own account.

Further than this, there seems no logical reason why a manufacturer having capital at command should not buy or develop a plantation on any scale desired, as well as public companies organized for the purpose in London or Edinburgh. After all, it is a question of managing a plantation by a board of directors acting through a local manager, just as a rubber shoe factory or a rubber tire factory is operated nearer at home by a local superintendent, under direction of a board none of whom is able to make a shoe or a tire.

There are plantation managers today as capable in their lines as any factory superintendent, and the system of plantation production of rubber has been as thoroughly developed as any line of manufacture. In fact, today the production of plantation rubber is largely a manufacturing business, if account be taken of the large part which machinery plays in converting latex into rubber. If the plantation be well chosen and is placed under competent management there seems to be no reason why the result should not be as favorable from a plantation controlled by a board of directors banded together for the manufacture of rubber goods as if the board were chosen for plantation management and had no other bond of union.

Not only has a change taken place in respect of rubber being obtained by planting trees, but the Amazon river rubber situation has become vastly more systematized than formerly, the new condition being more favorable to the satisfactory employment of capital on a large scale by outsiders. As has been outlined in THE INDIA RUBBER WORLD during recent months, new conditions of land ownership have developed in Brazil. Whereas *seringueiros* formerly worked singly or in small groups in an unbusinesslike way, with uncertain results and often without profit, today large areas of rubber land may be acquired by firms, and advantage is being taken of this condition in the collection, preparation, and shipment of rubber on a large scale.

It is true that at various times foreign capital has been invested in forest rubber propositions in South America with unsatisfactory results, but all the while rubber has been shipped from the Amazon in constantly increasing volume, and presumably profits have been made in the business. Here, as in rubber planting or the manufacture of goods, financial capacity and managerial ability are required, and it is not easy to see why these cannot be combined with respect to business in Brazil as well as in any other country.

The tendency in modern industry is toward the control by manufacturers of the raw material which they require, and rubber does not seem to afford an exception

to the rule. But the production on its own account of the rubber required by a single manufacturing company by no means makes a monopoly of the raw rubber market, even if it should give such company an advantage over some of its competitors. There is no other industry in the country which does not afford openings for new beginners or for independent factories, whether large or small, and the same appears to be true of rubber today as at any time since Goodyear.

THE LATEST DEMAND FOR RUBBER.

WHILE Count Zeppelin's exploits in aviation have been preceded by some very notable flights on both sides of the Atlantic, what he has been doing of late, perhaps more than the work of any one individual, points to the practical development of travel in the air. If one man can build an airship and travel in it 250 miles straight away with twelve passengers in less than four hours, landing them safely according to a pre-arranged schedule, it is reasonable to suppose that longer flights can be made, and as many or more passengers carried, under similar conditions. Moreover the doughty Count—and he is only 72 years old—has organized a daily schedule of travel through the air, booking passengers. It is rather expensive travel, to be sure, but not more so than some people with money are willing to pay for by other mediums.

The interest to the rubber trade of this new sport—or means of travel, or warfare, or however ultimately it may be classed—lies in the extensive demand for rubber to which it points. There is enough rubberized cloth in the envelope of the "Zeppelin" to completely cover one of New York's biggest skyscrapers, and it has to be material of the best quality. For the present it does not matter much whether airships and aeroplanes are "practical" or not; it seems that for some time to come, if not for always, there will be people eager for the sensation of flying, and this may be the only means whereby some of them will ever "get up in the world." There is a harvest in sight for the rubber manufacturers who find themselves in a position to supply suitable fabrics for the new vehicles, even though all of these may not be as expansive as the "Zeppelin."

It is singular how small has been the percentage of aeronauts injured in connection with flights, by whatever type of machine used. Not every one of these bold flyers is able to land just as he may wish, but most of them escape personal injuries, whatever may happen to their machines. The danger has been rather to people who remain on the ground. Even the smallest flying machine is apt to produce unpleasant results in case it falls unexpectedly upon a mere pedestrian. This fact alone may do much to encourage aviation, and thereby stimulate a demand for rubber fabrics. It is possible that in time everybody will make a point of riding in the air, to avoid being killed by other peoples' machines falling on them.

RUBBER AND SPECULATION.

AN after effect of the exceedingly high price to which rubber went some time ago is a tendency on the part of the producers to refuse to sell at present lower prices. In other words, they evidently believe the "level" to be \$3 a pound when it is really \$2 a pound or less. The ultimate result of this procedure will be excellent for the rubber manufacturer. Instead of carrying large stocks themselves, others will do it, and eventually that rubber will be put upon the market at the current price and will act to depress prices and to prevent speculation.

Rubber producers are just as human as any other class of business men and betray the same failings. When rubber was very low they laid it to speculative influences, and clamored for help. When the price became so high that it was almost prohibitive they unctuously talked of the law of supply and demand and pocketed the profits. To them low rubber is speculation with the "s" silent. High rubber a normal, business condition.

SPEAKING OF BUBBLES, it is well to remember that the art of bubble blowing has developed wonderfully in the last few years. At the outset soap and water made a mixture that, properly manipulated, produced a small iridescent globe that lasted but a few seconds. Scientists of our day added glycerine and made a bubble larger and more beautiful, that lasted for hours. Then came the rubber bubble, sold at every county fair, that lasted for weeks and months, and the acme of bubble blowing had been accomplished. Reasoning by analogy, therefore, was not the "Mississippi Bubble" like the primitive soap bubble, inherently weak and sure to perish quickly, and is not the "Rubber [Plantation] Bubble," modern, strong, inherently sound, and therefore bound to last a long while?

A MANUFACTURER ON PRICES.

TO THE EDITOR OF THE INDIA RUBBER WORLD: A paper such as yours that is in business to serve the interests of the rubber manufacturer should incite a public impression that the present situation is only temporary, that it is speedily going to be corrected, and that there is no immediate disaster ahead for either the manufacturer of the rubber article or the purchaser of same.

June 13, 1910.

A MANUFACTURER.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta-percha for the month of April, 1910, and the first ten months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubbers.	TOTAL.
April, 1910	\$163,433	\$93,926	\$571,809	\$829,168
July-March	1,416,655	1,499,770	3,510,618	6,427,043
Total, 1909-10....	\$1,580,088	\$1,593,696	\$4,082,427	\$7,256,211
Total, 1908-09....	1,225,882	1,139,271	3,165,096	5,530,249
Total, 1907-08....	1,141,634	1,365,616	3,122,544	5,629,794
Total, 1906-07....	1,040,560	1,007,935	3,015,892	5,064,387
Total, 1905-06....	1,035,705	1,360,346	2,369,480	4,765,531

The Editor's Book Table.

GOLD COAST. REPORT ON FORESTS. BY H. N. THOMPSON, conservator of forests, Southern Nigeria. (Colonial Reports—Miscellaneous No. 66.) London: His Majesty's Stationery Office. 1910. [Paper. 8vo. Pp. 238 + 24 plates. Price, 1s. 16s.]

THE forest resources of the Gold Coast Colony, a British possession in West Africa, lately have been studied with great thoroughness by the expert whose name appears on the title page of this report. The colony embraces upwards of 40,000 square miles, and is almost wholly covered by forests which are rich in woods of value, but what is of particular interest in this place is the fact that rubber yielding species are found in every part of the colony. Rubber was first exported from the Gold Coast in 1880, when 1,200 pounds were shipped from Accra, which port gave a commercial designation for Gold Coast rubber which is still recognized more or less in the trade.

The export increased steadily until 1898, when no less than 5,984,984 pounds were recorded by the customs. So large a figure has not been recorded in any subsequent year, the export falling to 1,520,009 pounds in 1901. Later, however, the exports have averaged about 3,600,000 pounds a year. This must be regarded as a well sustained yield of forest rubber. The maintenance of the trade is due to a gradual advance of the rubber collectors in the hinterland, and the bringing under European control of regions like Ashanti, which only a few years ago were savagely opposed to the entrance of white men.

Another element in the perpetuation of the Gold Coast rubber trade is the fact that the product is largely tree rubber, derived from the *Funtumia elastica*, known in different localities by such native names as "ire," "ireh," "ireye," "ireyi," and so on. The product has been known widely as "silk rubber." Mr. Thompson finds that the adulteration of *Funtumia* rubber with less valuable sorts and even with latices containing no rubber at all is common among the natives, and among the regulations which the government has considered for the benefit of the rubber trade is a prohibition of mixing the latices of the different trees and plants. The enforcement of such regulation is difficult, however, owing to the fact that even inferior grades of rubber are readily saleable though at a reduced price, and the suggestion is made that a small export tax be placed upon rubber with the view to affording funds for paying an official staff to supervise the collection of rubber.

The cultivation of *Funtumia* has been undertaken with success, and experiments have been made with various exotic rubbers, notably *Hevea*. Regarding this species it is stated that as regards growth and yield of rubber, it is superior to the native *Funtumia*, besides being a more hardy type, but there is still the uncertainty as to a sustained annual yield of latex. Another native rubber tree in the Gold Coast is the *Ficus Vogelii*, the product of which realizes in the markets about 80 per cent. of the prices paid for *Funtumia* rubber. *Ficus elastica* has been introduced to some extent but with disappointing results, the yield being small and containing more resin than rubber from the same species in the Far East. There are various species of vine rubber in the colony, that which has proved most valuable being *Landolphia owariensis*.

RUBBER SHARE HANDBOOK. DETAILS OF COMPANIES OWNING Rubber and Other Produce Companies in Ceylon, the Malay Peninsula, British North Borneo, Sumatra, Java, Africa, and South America. With special chapters dealing with the development of the plantation industry. London: The Financier and Bullionist, Limited. 1910. [Boards. 12mo. Pp. xxviii + 500. Price 2 shillings, net.]

The sixth edition of this useful and very complete book of reference brings its record of rubber companies up to April of the present year. The number of companies of which statistics are given in the book is 467. The directors are named of the companies registered in England and capitalized in sterling, and to a certain extent those of the "rupee"

companies in the Far East. The list of directors embraces 776 names, many of the names being repeated; in fact a single director in some cases will be found on the boards of from ten to fifteen companies. An interesting feature of the more recent development of plantation companies shown in this handbook is the activity with which plantations are being promoted in the Dutch East Indies. Java and Sumatra appear to be no less attractive to the British for rubber investment purposes than to Amsterdam and other centers on the continent.

THE A B C TO RUBBER PLANTING COMPANIES IN MALAYA, their possible production, profits, and dividends for seven years. By M. S. Parry, director Kuala Lumpur Rubber Co., Société Financière des Caoutchouc, etc., and E. M. Muraour. London: Fred'c. C. Mathieson & Sons. 1910. [Boards. 12mo. Pp. xv + 140. Price, 2 shillings net.]

The principal feature of this book, which, by the way, is not meant to compete with other directories of planting companies, but rather to supplement them, is a series of forecasts as to production, profits, and dividends for 140 companies, carried out for seven years, or up to 1917. It might seem, at first thought, a rash piece of business to predict the profits of any business for even one year ahead, but the gentlemen named on the title page have made an extensive study of their subject, and in their introductory pages make a plausible argument in behalf of the system on which their forecasts are based. These appear to be conservative at least, being based upon a maximum net price per pound of 5s. and a maximum yield of 400 pounds per acre, even from the oldest trees. Yet with these limitations we see predicted for some of the larger companies for the current year such dividends as 340 per cent., 169 per cent., 130 per cent., 173 per cent., 167 per cent., 135 per cent., 137 per cent., and so on. It can at least be said for the book that it is interesting.

SAFEGUARDS FOR THE PREVENTION OF INDUSTRIAL ACCIDENTS. Edited by David Van Schaack. Hartford: Aetna Life Insurance Co. [1910.] [Paper. 8vo. Pp. 174. Price, 50 cents.]

It appears to us to be most reasonable that a company engaged in insuring working men and others against accidents should promote the study of safety devices and safeguards against mishaps, both by employers and those who have to do with mechanical devices involving danger. It is evident from a study of this handbook, which, by the way, does not claim to be complete, that very many employés in factories endanger their own safety by lack of proper care of themselves. So that it is incumbent upon employers of labor to put such safeguards about the machinery which they employ as to guard workmen from their own lack of caution. This book relates not only to the proper installation and safeguarding of machinery, but to the proper sanitation of works and other means of protecting the health of employés. There are also suggestions as to what to do in case of accidents. There is little in this book relating to rubber mill equipment, beyond the treatment of safety clutches for calender rolls, but there is much of general application which may well be worth reading in rubber factories, including, for instance, the boxing in of driving belts.

CAOUTCHOUCS BRESILIENS. LA "PARA FINE" D'AMAZONIE (*Hevea Brasiliensis*). Par Gustave Van den Kerckhove, expert in caoutchouc. Brussels: Ballieu, 1910. [Paper. 8vo. Pp. 23.]

A COMPARISON of conditions of production of *Hevea* rubber on the Amazon and in the Far East, with a favorable showing for the former region.

REPORTS ON THE BOTANIC STATION, EXPERIMENT PLOTS, and Agricultural School, Dominica. 1908-09. Barbados: Imperial Commissioner of Agriculture for the West Indies. 1909. [Paper. Fol. Pp. 41.]

EMBRACES comprehensive notes on experiments with india-rubber of various species, under cultivation.



RUBBER LIGHTERS AND FRONTAGE OF THE CITY OF PARA.

Pára, Manáos and the Amazon.

By the Editor of "The India Rubber World."

FOURTH LETTER.

The Life of the Rubber Collector and His Relation to the Seringal Owner.—A Visit to Onças Island.—Dr. Huber and the Museu Goeldi.—Alleged Perils of the Amazon which Do Not Always Materialize on a Trip Upriver.—The Approach to Manáos.

THE first thing the laborers on a *seringal* are set at, when a new season begins, is the cleaning of the old *estradas*. Five or six months in a tropical forest bring great changes. Huge trees have fallen across the paths, dragging others in their fall and often making impassable barriers around which a way must be cut. Vines and young trees have sprung up and grown enormously, and everything that nature could do to efface man's work has been done. So that the cleaning of the *estradas* is no light task. It means not only reopening the path, but cutting a circle about two feet wide around each rubber tree, so that there will be room to work. Then comes the opening of new *estradas*, if there are laborers enough to work them. And next in order is the tapping.

This starts very early in the morning. The *seringueiro* rises at 4 o'clock, boils some coffee which he hurriedly drinks, and, provided with a *machadinha*, or little tapping ax, and several hundred tin cups, starts barefooted for his *estrada*. When he reaches the first rubber tree he attaches as many cups as the size of the trees warrants, usually in a circle as high up as he can conveniently cut. These cups are attached directly under the cuts, and catch the latex as it flows out. There is a great difference in trees as far as the production of latex goes. Some bleed freely, others reluctantly; some furnish thick, creamy latex, others thin latex, and occasionally one gives none at all.

Although alone in the jungle that shelters many wild beasts and venomous snakes, the rubber worker is very rarely molested. The wild creatures all get out of the way of man when they can. To be sure, if the tree tapper should leave his pile of tin cups for a short time, a trouble seeking monkey might swing down from the branches above, lift the stack, and throw it high in the air just for the delight of seeing the cups scatter.

From tree to tree goes the rubber tapper until all on his *estrada* have their girdle of cups. He now discards the tapping tool and, taking some vessel, very frequently an empty kerosene can, begins the collection of the latex. His first visit is to the tree first tapped, where the latex has probably ceased running, and the cups may be a quarter, a half, or nearly full, depending on the productiveness of the tree. By the time he has finished

this round and collected all of the latex it is 9 or 10 o'clock, and he is ready for breakfast. This he prepares himself and it usually consists of dried beef and beans, always accompanied by *farinha*.

THE SMOKING OF RUBBER.

The rubber worker is now ready to do the day's smoking. On the fire smoldering in his hut he heaps some of the heavy oily nuts that are borne abundantly by the "urucuri" palm (*Attalea excelsa*). Over this, if he has it, he places a funnel that is like a truncated cone open at each end, part of the lower edge being cut away to make a draught. Until recently these cones were made of earthenware and were heavy and rather fragile. To-day the *aviadores* supply them in sheet iron with handles on the side. These are much more portable and not breakable, but the *seringueiros*, that is, the old expert ones, detest them. They complain that the iron throws off so much heat that their work is much more disagreeable than when they used clay cones.

When the smoke is coming thick and hot from the funnel, the *seringueiro* winds a bit of freshly coagulated rubber about a piece of wood shaped something like a broom handle, and thoroughly dries it in the smoke. Then he dips this in the latex and holds it again over the smoke until that film is dried. Over and over again he repeats this process, the ball growing in size with every dipping. Where large balls are to be made that cannot easily be handled, a rest is made by driving two forked sticks into the ground with a cross piece connecting them. In the middle of this cross piece is a loop of bush rope into which one end of the pole holding the rubber ball is thrust. The *seringueiro*, grasping the other end, swings the ball over the smoke and turns it easily. As a further assistance a loop of bush rope coming down from the roof of the hut helps the laborer to hold his end of the smoking pole.

At the beginning of the smoking process the core of the *pelle* is dipped into the latex, drained, and the film smoked. As the ball grows larger and heavier the latex is carefully poured over it as it turns. Much of the latex coagulates in the air. This is in the form of thin films on the sides of the vessels, drippings in various parts of the camp, and latex that started to coagulate before there was time to smoke it. This forms the grade known as coarse Pará.

Day after day until Saturday the *seringueiro* pursues his monotonous task. On that day, he, with the half dozen others or



DWELLING OF RUBBER GATHERERS ON THE AMAZON.

[Built on poles for protection against the rise which annually takes place in the rivers. Hammocks are covered with mosquito nets—a very necessary precaution.]

more whose *estradas* join his, take their balls of rubber to the *seringal*, where they are credited with the number of pounds gathered, at say 50 per cent. of the market value as they know it. The other 50 per cent. is to indemnify the owner of the *seringal* for shrinkage, freight, and so on. The rubber ball is then branded with the mark of the *aviador* and stored awaiting shipment. Oftentimes too it is sunned that it may not dry out too rapidly.

His week's work finished, the *seringueiro* goes to the store, gets supplies of provisions for the next week, not forgetting plenty of "cachaca," which are debited to him at about 100 per cent. above the cost price.

The owner of the *seringal* makes his profit almost entirely out of what he sells to the *seringueiro*. The latter is obliged to buy goods only at the store, or else hunt some other *seringal*, the owner of which must assume his debt, which always exists, with a 20 per cent. increase for the transfer.

SIDE LIGHTS ON RUBBER GATHERING.

The tree tappers are not careful of the trees. Naturally improvident they would destroy them in one year if it meant more rubber, but fortunately more rubber cannot be gotten in this way from the *Hevea*, and so the trees survive and continue to produce year after year. There are stories of rubber gatherers on the upper reaches of the river who build fires about the bases of the great trees to stimulate the flow of latex, but no one seems able to verify such tales.

The tapping season may last from three to six months. This depends on location, and on the size and condition of the trees. Sometimes the trees are tapped daily, sometimes every other day. Often they are given a rest for a year. The amount of rubber secured per tree is difficult to estimate, but it probably does not exceed two or three pounds, and in some districts that have been constantly worked for a number of years even less than that. Old rubber men tell stories of *estradas* of a hundred trees that would turn in 20 to 30 pounds of rubber a day, but they agree that the time of such production is long past.

The actual extent of the rubber forests in the Amazon country is unknown, but according to those who have done a good deal of exploring only the fringe has been touched. The *seringaes* and temporary rubber camps are all located along the waterways.



TAPPING "HEVEA BRASILIENSIS."

[The *seringueiro* in one hand holds a hatchet and in the other a latex cup; several cups have been attached to the tree already; he carries also a can for collecting latex, and a gun.]

This means working the territory about a mile inland. The rest of the forest, comprising thousands of square miles, is as yet untouched. This is true not only in Amazonas and the other great interior states, but of the state of Pará as well. With labor and proper exploitation four times as much rubber could come out of the Amazon as is obtained at present.



SERINGUEIRO COMING TO CAMP WITH LATEX.

[The trunk of a fallen tree serves as a bridge over a stream.]



SMOKING RUBBER ON A SERINGAL IN THE AMAZON COUNTRY.
[IN THE FOREGROUND ARE SHOWN SOME LARGE PELLETS OF RUBBER, JUST SMOKED.]

The securing of laborers is the most difficult part of the undertaking. To get a rubber estate in the Amazon valley is easy. Million of acres of land with rubber trees are without owners. The land costs nothing, the government exacting a fee only when it is registered.

A VISIT TO ONCAS ISLAND.

One of the leading exporters in Pará is a wonderful producer of artistic photographs. It is natural that he should have taken boat journeys through the islands and up and down the great rivers, not only in search of rubber knowledge but in pursuit of his own particular fad. It was most gratefully, therefore, that I accepted his invitation to take a launch trip to Isla des Oncas, the great island that lies some miles to the south of the city. This island is cut in two by a narrow natural canal which at high water is navigable by canoes and rowboats. To catch the tide meant an early start. So I awoke the Yankee Consul and the Visiting Manufacturer at 4 o'clock, and after coffee we hastened down to the water front, arriving just as the Exporter appeared, with several porters laden with eatables and drinkables.

To cross to the island we embarked in a little three-cylinder kerosene launch and soon were chuff-chuffing across the bay for the "Island of Tiger Cats." Once over to the mangrove fringed shore we coasted up and down until finally the sharp eyes of our pilot detected the little opening of the channel. We were then transferred to the rowboat that had been trailing behind.

The launch turned back and we entered the dim tree shaded channel. In some places it was so narrow that there was barely room for the oars; in other places it was from 10 to 20 feet wide. The water was the same yellow brown tint that the whole

Amazon affects. From the start we saw rubber trees—old settlers that had been tapped for generations, their trunks swollen, scarred and disfigured by thousand of *machadinho* strokes. Often pole stagings had been erected about them, crude contrivances to allow the rubber gatherer to reach hitherto untapped surfaces.

Here I saw for the first time the curious little surface swimming fish, with a pair of bulging eyes in the top of the head to view the upper world, and another pair underneath to view the nether world.

As we got further into the island the waterway broadened. We passed many little river huts, and occasionally met a canoe whose occupants courteously and gravely bade us *bom dia*. The curving stream, fringed with palms, huge "mocco-mocco" plants



STEAMER "RIO ITUKY," ON THE JURUPARY.



MUSEE GOELDI—ADMINISTRATION BUILDING.



MUSEE GOELDI—RESERVOIR.

with white calla like blossoms, and great ceiba trees, was wonderfully beautiful.

Of animal life we saw little; of birds there were parrots and hawks; of animals, one black monkey; and of insects, great blue butterflies, and one huge bird catching spider as big as a saucer.

As we were emerging into the river on the other side of the island a sudden shower fell, and we all held a tarpaulin above our heads until it was over. It was then that my Companion exclaimed that a wasp had stung him. The wound didn't look like a bee sting, as there were two little punctures, close together. Being on the back of his hand he was advised to suck it as a precaution, which he did, and no inflammation followed.

The rain having ceased, the tarpaulin was put away, when somebody said, "There goes a centipede," and we caught a fleeting glimpse of something that looked like an elongated earwig which ran into the Visiting Manufacturer's pocket. It was rather a trying experience, but he never turned hair and sat perfectly calm, while the Exporter with a pair of small scissors very gingerly turned the pocket inside out, but did not find a cent or a pede, either. A moment later the insect was discovered in the fold in his trousers, and very dexterously nipped with the scissors and thrown overboard. Then we all breathed a sigh of relief, for the bite, though not dangerous, is apt to give one fever for a few days.

DR. HUBER AND THE MUSEE GOELDI.

I had visited the Musee Goeldi many times while in Pará, and each time was more and more impressed with the natural wonders of Brazil. The museum is crowded with birds, insects, reptiles, animals—or, rather, their carefully preserved cadavers—and a week of careful looking would not enable one to observe in detail a half of what is there. The result is the visitor goes away with a misty and mixed recollection of moths as big as shingles, flies the size of one's hand, beetles bigger than mice, great lizards, monstrous alligators, and snakes of all sizes, colored in infinite variety. Birds grotesque, birds beautiful; animals unbelievably strange, and fish of such infinite variety that imagination itself pauses helpless in stunned surprise.

In cages, dens, and enclosures surrounding the museum buildings are also housed a goodly number of living representatives of those in the cases inside. Not that I spent all of my time either in the museum or the zoological garden, for there is the botanic garden also. And furthermore, there is Dr. Jacques Huber, who knows more about the *Hevea* species than any one else in the world, who has gathered many of the typical sorts about him, and is steadily observing them day by day as they develop into mature trees.

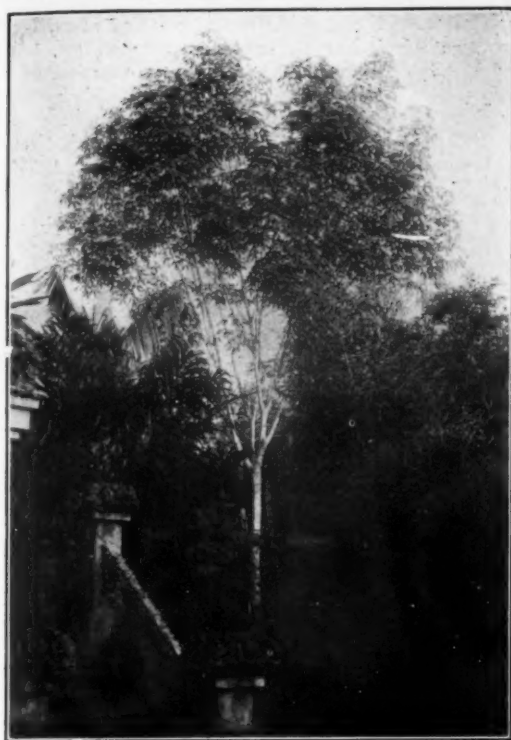
The doctor, by the way, in the course of our many conversations, suggested a new theory for the greater "nerve" in smoked rubber than appears in the unsmoked. He explained that a

pelle, from the time it is formed, undergoes a natural, continuous, solidifying pressure, caused by the evaporation of the water from the outside layers and their consequent contraction. Unsmoked rubber, on the other hand, put up either in sheet or rectangular block form, experiences no such pressure. The theory seemed to me worthy of note. I remember that in Panama, in gathering *Castilloa* rubber, we rigged some crude presses to get the water out, and in some instances, where the rubber was left for a long time, its strength was greatly enhanced.

As I have said, the worthy Doctor knows the *Heveas*. He has quietly, patiently, and persistently specialized on them for years. And it was with exceeding interest that I heard him state that the *Hevea Brasiliensis* is, after all, the one producer of really high-grade rubber. He knew them all from the *Brasiliensis* to the *Spruceana*, and named twenty varieties and their characteristics off hand. One that was new to me was the *Randiana*, named after the orchid collector Rand whom New Englanders will remember and regret. A very thrifty specimen of this is in the gardens, but it gives no latex. It is this eminent botanist's opinion that many other *Heveas* will be discovered, and he is ever on the outlook for them.



DR. JACQUES HUBER AND HIS TAPPING KNIFE.



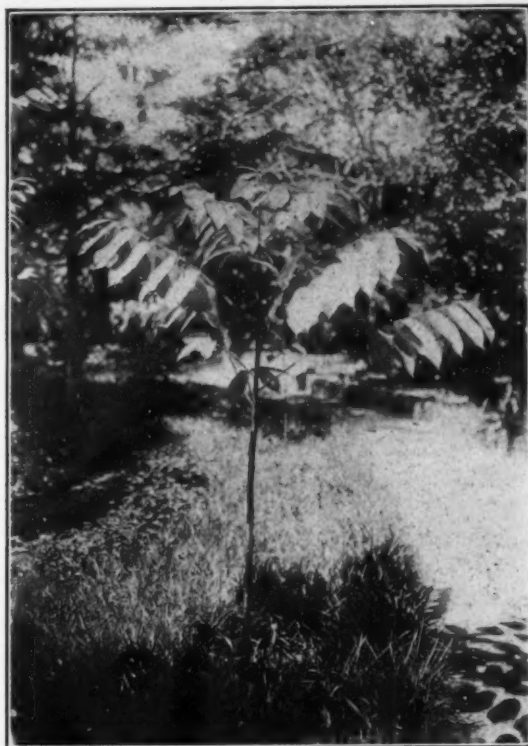
"HEVEA RANDIANA" (HUBER).
[In Pará Botanic Garden; thirteen years old.]

Nor is his attention concentrated upon the trees that produce fine Pará rubber. The *Sapiums*, which are most plentiful throughout the Amazon country, are known to him equally well, and he has gathered ten varieties into the garden for observation. Most of them produce a latex that is exceeding resinous. One or two species, however, give a good grade of rubber, and were labor plenty they would be well worth exploitation.

I had many samples of balata from the Amazon region and took occasion to ask him of the *Mimusops* in the Brazils. Just as much at home on that topic as on *Hevea*, he named a dozen varieties and told of sections where the trees are abundant, although the gum is not gathered or valued at present in Brazil.

The learned Doctor has worked for many years in Brazil, oftentimes I fear without the appreciation that his energy and industry have deserved. At last, however, both the government and the world at large seem to be awakening to his value. What he had long wished for, an experiment station, has been established about 150 kilometers from the city, situated on the railroad that runs down to Bragança, and he is much encouraged. By the by, he has invented a tapping tool that looked pretty good to me. I went out to the gardens at daybreak and saw him "herringbone" some *Hevea Brasiliensis* trees with it. It is interesting to note that they gave exactly the same product for their size as *Hevea* trees in the Far East.

The rubber known as "caucho" had been on the market years before the tree that produces it was identified botanically. For a long time it was claimed that it was an *Hevea* product. In 1898, however, Dr. Huber visited the Ucayali river and, after much searching, was able to find a few caucho trees. The difficulty in finding them was due to the fact that those that remained were growing in dense forests far removed from the waterways. It will be remembered that the tree is cut down in every instance to secure the rubber; hence its scarcity. At the



"CASTILLOA ULEI" IN PARA GARDENS.

time of his visit it was not blossoming or fruiting, and only leaves and twigs could be secured, but these proved it to be a *Castilloa*. Dr. Huber and the Italian botanist Dr. Buscalioni agreed that it must be the *Castilloa elastica*, and it was not until some years later that it was identified as a different species, *Castilloa Ulei*.

To those who are interested in the sources of rubber, caucho was for a long time thought of as existing only on the upper waters of the Amazon, notably in Peru. Dr. Huber and his colleagues, however, found it in practically the whole region of the lower Amazon, the Trombetas, Tapajós, Xingu, and Tocantins rivers. Indeed, it is becoming evident that where *Heveas* flourish *Castilloas* grow equally well, and the reverse is also true. During the year 1909 the state of Pará shipped nearly 1,000 tons of caucho.

ALLEGED PERILS OF THE AMAZON.

I dislike exceedingly to confess it, but I got badly frightened in Pará and came very near taking boat back to Barbados and sending the usual excuses to friends in Manáos, such as "important cables," "business complications," or the like. It came about this way. The friendly Americans and English resident there are delighted to receive and entertain fellow countrymen. Many of their visitors, however, are woefully unfitted for tropical life and make ideal "fever food." Others pay no attention to cautions, but go out and hunt for fever, and find it. Then resident friends are obliged to answer frantic cables, furnish physicians and nurses, and stand the brunt of all the worry. Oftentimes, too, they supply the funds necessary for cure or decent interment. They are perfectly willing to do this—that is the former—and their kindness and generosity is spontaneous and without limit, but the strain tells.

If they are somewhat fearful for a visiting friend in Pará, they are doubly so for one who goes to Manáos. When, therefore, one after another showed me cables and letters full of

fever stories from the upriver rubber center it began to make an impression, and I found myself formulating reasons for dodging. But if one will only dose oneself with a sufficiency of forebodings, a reaction is sure to come, and courage returns. This was my case. And of a sudden I found myself determined

to discover what Manáos would do to me. Further than that came the belief that with common sense and care I should probably get through all right. They were exceedingly nice, those friends of mine, when I rendered my decision. One, with a whimsical smile, said:

"It's sure to be interesting anyhow. Say your prayers and trust in cascara."

Another secured for me the *cabin de luxe* on a fine Hamburg-American boat and outlined a river journey princely in its comfort and very speedy. This I refused, although with real regret. I had my eye on one of the smaller Booth boats that had accommodations for only sixteen passengers and would carry on that trip only two, myself and Companion. It was a freight boat, going upriver almost empty, which

The anchor came up about 5 in the afternoon and, facing a pleasant breeze, with half of the propeller out of water, "grinding air," we started out through the tangle of low, heavily wooded islands that cluster about the mouths of the Pará and Tocantins rivers, heading for the "Narrows" in the care of two Indian pilots who knew the many channels day or night by instinct. Unless it came on to rain very heavily we would run all night. It was soon too dark to see much, so I turned in.

SCENERY ON THE AMAZON.

Every one asserts that there is no need of mosquito bars going up or down the Amazon, but I had mine adjusted in spite of the pitying smile on the face of my Companion, who didn't unpack his. I had an extremely self satisfied feeling when I awoke about midnight and heard him at work hastily getting his protector into position. Not that the mosquitos were bad or numerous, but they were aboard.

I was up at light and, after a bath in the alluvial soup the river furnishes, went on deck. The boat was plowing through a lakelike expanse of water, with islands in all directions. It is difficult for one who has not studied this subject particularly to appreciate how many thousands of islands big and little are crowded into the lower Amazon. The subject is usually dismissed with the time worn statement that Marajó is "twice the size of Massachusetts." Why not say that if all the islands, with Marajó for a base, were piled one upon the other, they would form a pyramid so high that a cannon ball, dropped from the top at half past 7 in the morning, and falling at the rate of 5,280 feet a second, would not reach the base until late in December?

As the river was rising we passed through and by acres of floating grasses, weeds and logs, the larger masses being easily avoided. About 10 o'clock we entered the Narrows, our channel being perhaps 300 yards wide. On either side the low lying alluvial shores were thick with palms of various kinds, together with Spanish cedars, rubber trees, acacias, and a great variety of hard woods, over which ran a riot of vines big and little, every inch of land far out into the water being crowded with luxuriant vegetation.

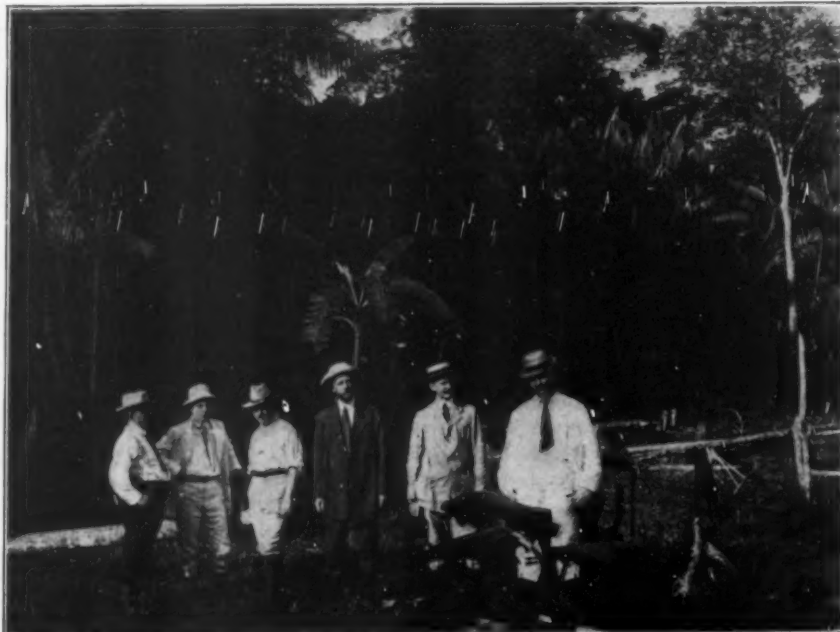


HERRING BONE TAPPING.

[Hevea at Museu Goeldi.]

would mean hugging the shores to avoid the current. It was a rubber boat, and its captain had been making the river journey for 30 years. There would be no shuffleboard, no pleasantly wasted hours in the smoking room, no fascinating acquaintances. All of which would give me added time and opportunity for observation and work.

We boarded the boat in the early afternoon and the Captain promptly gave us the run of the ship. There was no social hall and the chart house deck, above which was the bridge, was roomy, high above the water, screened from sun and rain, and, although the Captain's private domain, he made it ours for the river voyage. If I had outfitted a swell ocean going yacht the equipment would not have been as practical as that afforded by this steady, roomy, matronly freighter.



THE PICNIC PARTY AT ONCAS ISLAND.



ONCAS ISLAND—INLAND WATERWAY.

Many of the vines and trees were masses of beautiful flowers, and while the epiphytes and orchids that clung to and clustered on trunks and branches did not show many blooms, they added to the decorative effect wonderfully. We looked here for the manatee, or sea cow, which lives in these waters, suckles its young, and lives out its quiet uneventful life, shyly avoiding everything animate but its own kin. But we had no luck.

Every now and then we passed a *seringueiro's* hut, or *barracão* close to the water's edge, built on posts above the rise of the river, while in front of it were tethered one or more canoes, the only means of transport, and indeed of refuge, when the water is very high. These huts were simple in construction, made of poles lashed together with bush rope, the sloping roofs covered with broad palm leaves. The floors were of rough hewn logs, with a pile of clay or earth for a fireplace and no chimney. Oftentimes the whole front of a hut was open.

So close did we run to the shore that we could see the owners idling in their hammocks and many times surprised coveys of naked children, who promptly fled to cover, only to venture out when we got by. Some of the older ones, to be sure, would jump into canoes and paddle toward us, coming close to the stern as we passed so that the wash of the steamer tossed their frail craft up and down most perilously, which adventure they hailed with shrill squeals of delight.



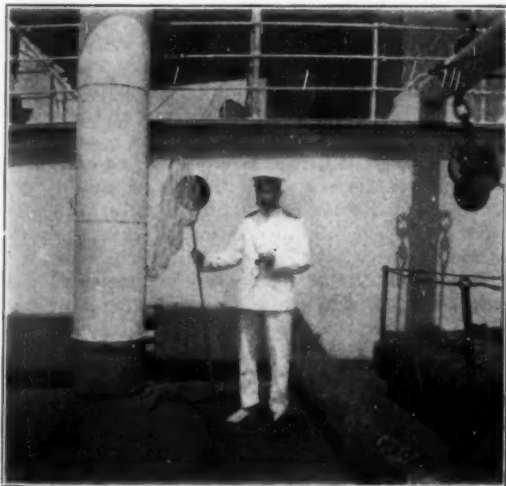
BUNGALOW ON ONCAS ISLAND.

We saw many such huts and it is from them that the impression often is gained that the whole population of the Amazon valley is made up of hut dwellers. Such is far from being the fact. On the rising ground away from the river bank are some magnificent estates, or *fazendas*, with fine buildings, great herds of cattle and horses, and very considerable plantations. Vast areas of the country are, of course, not only unsettled but unexplored. And these *fazendas*, widely scattered as they are, do not make the showing they deserve.

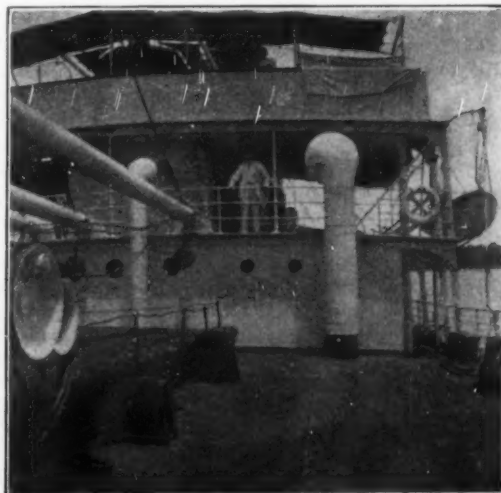
As we ran close to the shores we were constantly flushing flocks of birds that looked like short tailed pheasants. They were very striking in their brown and red plumage, and as they flew along the margin of the stream alighting often and balancing themselves on swaying branches near at hand, it looked as if sportsmen were few. We put them down as Brazilian partridges, but learned later that they were a sort of gilded buzzard unfit for food, and altogether despicable. It was a disappointment, for all the way to Manáos they persisted, sometimes in flocks of a hundred or more.

Of alligators we saw not one. Not that this saurian had disappeared permanently, but the high water had driven it into the smaller waterways somewhat removed from the river proper.

In the afternoon of the first day the ship's doctor, net in hand, came to our deck and talked very interestingly of his



ON THE BOOTH LINER—THE DOCTOR.



ON THE BOOTH LINER—THE EDITOR.

ambitions as a butterfly hunter. It was his first visit to the tropics and he was gathering everything insectivorous that he could catch. Like a wise man, he had secured the help of the crew, and it was an object lesson to those who venture upriver without mosquito bars to review a night's accumulation. There were enormous beetles, moths, gigantic praying mantis, ichneumon flies, and bugs unclassified by the score. Then in the daytime came the shy, quick moving butterflies in blue, yellow, and green, and thin waisted wasps and hornets, all of which kept him busy.

The course for many years was by Breves, the principal settlement on the island of Marajó, at one time the center of the rubber trade. There the channel was so narrow that an anchor was let go and the boat swung round before it could head right to go on. One of the river pilots, however, once asked permission to take a boat through another channel that he had discovered—the one we were in—and since then the old passage had been abandoned.

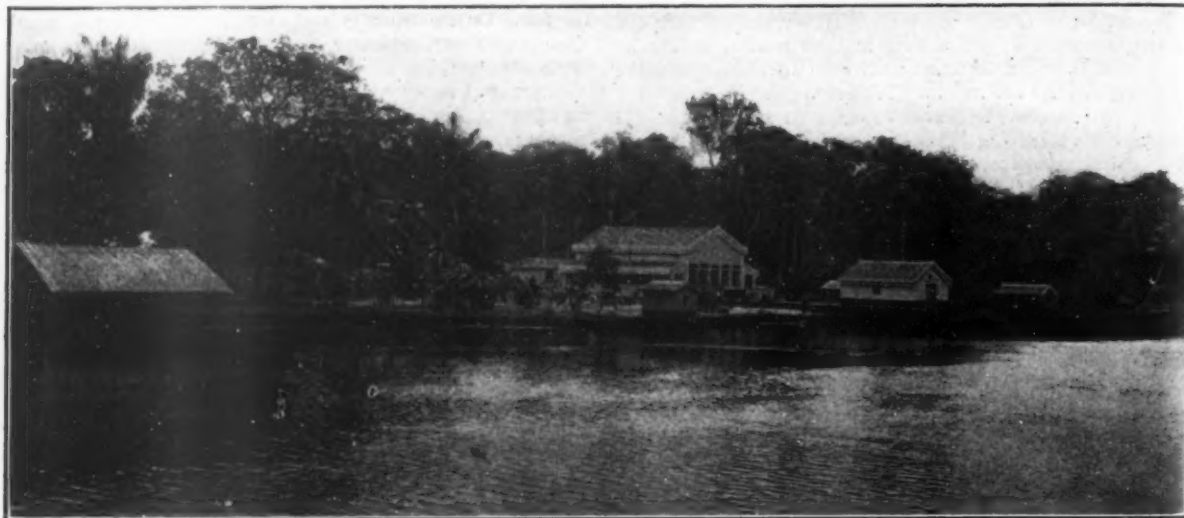
Almost from the start we secured the use of a pair of powerful glasses, the property of the Captain, which gave us glimpses into the jungle that were fascinating. We could pick out rubber trees nearly every time, particularly where they had been tapped. I had long been wondering why it was that the *Hevea*

THE COURSE FROM PARÁ TO MANAOS.

I do not feel that in the foregoing I have given a clear idea of our course, or what we saw before we emerged into the Amazon. Let me put it briefly.

We went north from Pará, with Oncas island on the left, heading for Point Musqueiro on the mainland, then west and south in the Pará river, passing Caprin light on the southwest. Next came Mandilhy, which also has a light; then through Jaraca channel, with Muru-Muru island on the left, where one out of every three steamers gets stuck in the mud; by the village of Antonio Lemos, where is situated the cable station; past the village of Gurupa, by Baxio Grande island, and at last we were in the Amazon.

The river was now three miles wide, instead of a few hundred yards. The jungle was more open, the clearings larger, and off to the north the eye was delighted by the tree crowned heights of the Sierra Jutahy. One wondered why those broad mesas were not the site of a healthy breeze swept city. We still kept close to the shore, sometimes on one side, then on the other, to avoid great shoals that form and disappear almost overnight. Occasionally there was a break in the forest wall



PANORAMA OF "VILLA NOBRE," A BEAUTIFUL FAZENDA NEAR BREVES.

was able to withstand the inundations and still be thrifty. A very cursory examination of the Amazonian soil tells the whole story. It is an almost impervious, waterproof, clay, which would take months to saturate, and then would not be waterlogged.

That afternoon we ran through an extremely heavy shower and looked back on the biggest, most gorgeous, double rainbow I have ever seen. With nightfall came the great frog concert, varied by the screaming of nightbirds and the chirping of innumerable insects. Sitting on deck, pajama clad, enjoying the gentle breeze caused by the boat's progress, with the dusky loom of the jungle on either side and the "gorgeous Southern Cross" above us, the scene was, in tourists' phrase, "one to inspire sentiments of awe." I always admired this last phrase until I actually saw the Southern Cross. I had read of it as a blazing aggregation of stars of the first magnitude, holding the center of the Cerulean dome. The "intermediate" geography that I first studied had a half page illuminated picture of it. When finally, after much searching, I saw it, I was filled with awe at the imagination that could see beauty in that little shrinking, out-of-plumb collection of bleary eyed stars, let alone making a constellation of it. It is an insult to Orion and all of his family.

and we would see vast savannahs, grass covered, their light green surface standing out in bold relief against the dark green background of the forest.

Speaking of floating debris, the bow of our boat caught a log which jammed crosswise and held in that position, and we pushed it upstream. It gathered everything that came its way, and the result was that in a couple of hours the sturdy engineers were not only forcing the boat upstream, but a floating island a quarter of an acre in extent, made up of logs, driftwood, grasses and floating wreckage of all sorts. After a time it grew to be such a burden that the engines were reversed and we ran backwards until clear of it to avoid making an island that might dam the river.

The banks of the river were now strongly marked and from 6 to 10 feet high above the water level. On every tree that fringed the edge, and indeed on the thick growing shrubs and vines, could be seen the distinct highwater mark of the previous season in the shape of mud stains. This line showed that the river had still 10 feet more of rise to reach last year's level, and by the way it was coming up it would undoubtedly do it. More and more we saw the work of the floods. Great stretches of devastated forest, covered with rank reeds and grasses, huge



BREVES, ON THE LOWER AMAZON.

dead trees piled in picturesque confusion upon the river's edge. On a small map the river looks straight and its channel is well defined. In fact it pursues a sinuous course and is everywhere interrupted by islands big and little, so much so that unless one refers to a chart it is difficult to know when one is really passing the mainland.

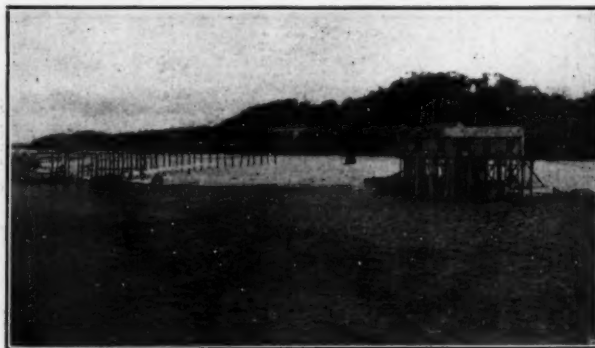
We saw many large birds, water turkeys, blue herons, egrets, and thousands of parrots. We passed the confluence of the Xingu river, then the little settlement of Prainha, a town of some 300 inhabitants, its houses painted blue and white with red tiled roofs, its fleet of canoes and its excellent river wall, with buttresses for strength and steps down at the water's edge at each end. Above the town were extensive cornfields and pastures where many horses and cattle were grazing.

The current was decidedly swift along there, and we moved up stream slowly. Once fairly by the village we lost touch with mankind, the river broadened to about eight miles, and except for the rounded peak of Serra Urubucoara all that we could see was great forest covered plains. A great river like the Amazon, subject to floods, always builds banks for itself even if it tears them down again. The larger and heavier materials brought down by the floods are piled on the "near" banks and promptly covered with verdure. For miles we passed banks 10 or 12 feet above the water level and the impression was that the land sloped gently up from them. But when a break came in the forest wall great meadows would be shown a trifle lower than the river bank, these meadows in turn sloping up into grass lands where cattle fed by the thousand, shoulder deep in the luxuriant growth.

I had heard many say that the journey up the river, except



PLANTED "HEVEA" (32 MONTHS OLD).
[Estate of David Riker, at Santarem.]



SANTAREM, ON THE AMAZON.

as one passed through the Narrows, was uninteresting and dreary. My mental picture had been of an expanse of water so broad that the shores dimly seen offered nothing of interest. Perhaps I didn't question the right men. I once knew a man in the gas stove business who visited England in the summer time and all he could describe on his return were the thousands of chimney pots on London dwellings. Maybe I had taken the view of a chimney pot traveler. Actually every waking minute disclosed something worth seeing. The river is from 5 to 15 miles wide and the scenery constantly changes. The stories that for example, in one place it is 900 feet deep, are exaggeration. I followed the charts closely and the greatest depth recorded is 300 odd feet, which of course is good.

The third night out it was very dark and as we worked slowly upstream we saw a winking light far ahead. Soon we learned that the speedy Hamburg-American boat, on which we so nearly took passage, was fast in a mud bank. We solemnly took her mails and went on through the darkness, promising to report her at Manaus.

We got to bed late that night because of the excitement, but were up at daylight as usual and found the surface of the river even more thickly littered with logs—logs that were thickly crowded with passengers. There is a little black and white river gull that exists by the million in the upper river. They love to settle on these floating logs and sail and sail. The way they crowd every available inch of space above the water reminds one of a Hudson river boat on a holiday; there is not room for even one more.

AMERICANS IN AMAZON LAND.

During the night it came on very dark with thunder showers, but we did not stop, the pilot calmly steering by the flashes of lightning. Very early in the morning we passed the Tapajos river and the town of Santarem. Here is a settlement of some 2500 people. Santarem is noted, as far as Americans are concerned, as a place where a body of Confederates from Texas established themselves after the civil war. They believed in slavery and moved to a country where they could own slaves. Somebody in Brazil must have heard of it, for not long after their establishment slavery there was abolished. It is rumored that rather than surrender the right to own and rule others they intend to move to New York city and secure positions on the police force.

More and more the character of the river bank changed. Often it was a palisade of clay, 10 to 20 feet high, its face as smooth as if cut with a spade. Near Obidos this was particularly marked. This town, by the way, shows up very well from the water front. Its public buildings, church, and dwelling houses—many of them of the bungalow type—are all in view, as the town is built on sloping ground. Above the town the river bank is very high, and the clay strata, in lavender, yellow and red, is very striking.



OBIDOS, ON THE LOWER AMAZON.



ITACOATIARA, OR SERPA.

For the first time in the journey our pilot seemed in doubt, and kept the lead going for many hours. Then it was the Captain told us stories about running ashore. It is not particularly dangerous when the river is rising, as one is sure to get off in a few days. He told of one tramp boat that ran aground five times on the journey from Pará to Manáos. His own boat was hung up on a mud bank once for 13 days, and right in a mosquito colony at that. Then there was a Booth boat in the upper river that was fast for six months up on the bank where the floods had left it, and was about to be dismantled when a huge section of the river bank caved in, depositing the boat, right side up, far out in the deep water.

Did I mention that we had some hundreds of crickets aboard, and that they gave nightly concerts? Like the cockroach they ate soiled handkerchiefs, starched collars, and book bindings, but they were not sordid about it. They did stop to fiddle now and then. But the cockroach thinks only of filling his little tin clad belly, and racing across the floor to be stepped on when one is barefooted.

In the upper reaches of the river, at least along the banks, there seemed to be few rubber trees. This in spite of the statement of the ship's doctor that all of the large ones on the bank were rubber trees—some of the crew had told him so. We did not see the Parintins hills above Obidos, which mark the boundary of the states of Pará and Amazonas, because the rain blotted out most of the landscape. When it ceased we were close in shore opposite a great ranch where were cattle and horses by the hundred. It was imported stock too. One huge snow white Indian bull, standing like a statue in white marble, occupied the foreground until we passed out of sight. More and more we saw clayey palisades, riddled with holes like sand martins' nests,

their tops draped with blossoming vines, the body of the bluff often made up of such brilliant colors that it looked like a petrified rainbow.

In the little lagoons and eddies were natives fishing, and oftentimes a turtle hunter, bow and arrow in hand, watching the water for a shot. It was growing warmer all the time, for the breeze was with us, and the smoke of the steamer showed it by drifting upstream a little faster than we could go.

THE APPROACH TO MANAOS.

We got to Serpa, or Itacoatiara, which is situated at the junction of the Madeira, just at nightfall. Here the engineers of the Madeira-Mamoré railroad have their headquarters, and the town is healthy, lively, and interesting. Here also is the home of an American named Stone. He has thousands of acres under cultivation and is prosperous, capable and as much an American as he was when he settled here 40 years ago.

In due time we reached the junction of the Rio Negro and the Amazon, or the Solimões, as it was now called. The Solimões, yellow, muddy, swift, comes resistlessly in from the south, and, meeting the slow, densely black flood of the Rio Negro, holds it back, shoulders by it, crowds what does escape downstream to the northern bank, where for a time it shows a narrow ribbon of black water and then disappears.

Manáos is situated up the Rio Negro, and we therefore turned into that stream. Crossing the water line it was startling to see how plain the demarkation was. On one side a boiling coffee colored flood, on the other a dead black lake. Occasionally an island of coffee colored water appeared boiling and swirling on the inky surface of the Rio Negro, but of blending there seemed to be none.

[TO BE CONTINUED.]

RUBBER IMPORTS AT BOSTON.

IT might naturally be supposed that at a port surrounded by so many important rubber goods factories as Boston the importation of raw material there would reach very considerable volume. This happens, however, not to be the case. During the last complete fiscal year, whereas imports of india-rubber into the United States—exclusive of gutta-percha, balata, Pontianak, and the like—amounted to 88,359,895 pounds, the entries at Boston were only 324,348 pounds. THE INDIA RUBBER WORLD's statistics of rubber imports for the month of May of this year indicate no arrivals at all for the port of Boston. This condition, of course, is due to the fact that, while Boston is an important shipping port, in these days when rubber is transported by the shipload the tendency of the rubber bearing ships is to the larger port of New York, whence the rubber required in the territory of which Boston is the capital is sent by land or water, as may be more convenient or economical.



CAMETA, ON THE AMAZON AND TOCANTINS.

[From the first photograph of the landing.]

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED MAY 3, 1910.

- N**O. 956,592. Tire inflater for automobiles. H. P. Maxim, Hartford, Conn.
 956,625. Joint-tie for cushion tires. F. Buob, Cincinnati.
 956,735. Vehicle wheel tire. [Pneumatic.] A. T. Scaramuzzi, Paterson, N. J.
 956,741. Nursing bottle and nipple. D. B. Smith, Deerfield, N. Y.
 956,884. Inner tube for pneumatic tires. J. H. Brown, West Hoboken, N. J., assignor to Brown Perfection Tube Co.
 956,928. Pneumatic tire. A. Bonnet, Paris, France.
 956,948. Pneumatic tire. H. L. Dazey, Dallas, Texas.
 956,954. Spare tire holder for automobiles. F. E. Fahlstrom, assignor of one-half to C. B. Hickox, both of Bridgeport, Conn.
 957,165. Anti skidding tire. Iva B. Kempshall, Boston.
 957,166. Vehicle tire. [Pneumatic, with special tread.] Same.
 957,167. Tire. Iva B. Kempshall, Boston, assignor to Kempshall Tire Co.
 957,168. Tire. Same.

Trade Mark.

- 48,853. Bowers Rubber Works, San Francisco. The word *Crackproof*. For rubber belting and hose.

ISSUED MAY 10, 1910.

- 957,309. Tire grip. A. R. Corrington, Hartley, Iowa.
 957,385. Air hose coupling. E. W. Shaw, Weir, Kans.
 957,413. Protecting cover for pneumatic tires. A. Constantin, Hanover, Germany.
 957,492. Hose. R. H. Brown, Los Angeles, Cal.
 957,495. Process of producing rubber. H. O. Chute and F. L. Randel, New York city.
 957,556. Rubber heel. S. Havens, Oakland, Cal.
 957,559. Lacing. A. T. Holt, Columbus, Ohio.
 957,569. Garden hose carriage. A. Low, Newark, N. J.
 957,597. Tire inflating pump. M. L. Bastian, assignor to Olney Automobile Co., Limited, both of Philadelphia.

ISSUED MAY 17, 1910.

- 957,867. Braided Hose. H. Z. Cobb, Malden, Mass., assignor to Revere Rubber Co.
 958,053. Tire protector. J. Wilmes, Maquoketa, Iowa.
 958,300. Tire wrapping and unwrapping machine. N. E. Raber, Akron, Ohio.
 958,629. Cushion padded horseshoe. W. N. Gowing, San Augustine, Tex.
 958,693. Tire. W. B. Connell, Chicago.

Trade Mark.

- 47,282. E. T. Horsey, Cleveland, Ohio. The representation of a fox over the letter Y. For pneumatic tire patches.

ISSUED MAY 24, 1910.

- 958,748. External armor for pneumatic tires. J. L. La Driers, Albuquerque, N. Mex.
 958,867. Cap for valve stems for pneumatic tires. G. F. Foss, Los Angeles, Cal.
 959,041. Vehicle tire. J. Allend, Philadelphia, Pa.
 959,058. Wheel. J. L. Jackson, River Forest, Ill.
 959,152. Automatic train hose coupling. J. F. McElroy, assignor to Consolidated Car Heating Co., both of Albany, N. Y.
 959,176. Resilient Wheel. G. A. Spaeth, Columbus, Ohio.
 959,178. Waterproof fabric. G. Street, New York city.
 959,226. Hose coupling. W. W. Keys, Yonkers, N. Y.
 959,391. Tire case. C. A. Russell, New York city.
 959,379. Elastic bed pan. F. M. Otis, Ann Arbor, Mich.

Trade Mark.

- 49,294. Boston Rubber Shoe Co., Boston. The word *Sledding*. For overshoes.

ISSUED MAY 31, 1910.

- 959,579. Elastic tire for vehicles. I. S. McGiehan, London, England.
 959,569. Tire remover. P. C. Wient, York, Pa.
 959,732. Vehicle wheel rim. W. E. Greer, Kenmore, assignor of one-third to W. F. Pfeiffer, Akron, Ohio.
 959,894. Tire pump. W. S. Stapley, Bridgeport, Conn., assignor to The Coe-Stapley Mfg. Co.
 959,957. Protector for pneumatic tires. R. J. Morrison, St. Louis.
 960,001. Wheel tire. B. Dahl, Minneapolis, Minn., assignor to Dahl Punctureless Tire Co.
 960,070. Tire lifter. J. W. Brown, Arroyo Grande, Cal.
 960,119. Automobile tire. H. S. Shafer, Nazareth, Pa.
 960,135. Vehicle tire. J. A. Wright, Brownsville, Pa.
 960,212. Vehicle wheel tire. F. Wiechard, Hanover, Germany.

Trade Mark.

- 48,848. F. F. Rick, Buffalo, New York. The representation of a bison (buffalo). For rubber tires.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1909.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 4, 1910.]

- 541 (1909). Apparatus for locating punctures in tires. G. E. Dickman, London.
 543 (1909). Pneumatic tire with grooved tread. P. Wienskowitz, Berlin, Germany.
 *546 (1909). Elastic tire formed of taper segments of leather or other material, ranged on a circumferential wire. L. M. Nelson, Douglas, Wyoming.
 722 (1909). Pneumatic tire cover. H. Broomfield, Norley, Cheshire.
 892 (1909). Puncture preventing band for tires. C. L. Bonnet and E. J. A. Leclerc, Paris, France.
 916 (1909). Toe cap for football boots. J. H. Brown and D. A. Berry, Northampton.
 989 (1909). Spring wheel with elastic tire. S. A. Schewczik, Vienna, Austria.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 11, 1910.]

- 1,047 (1909). Tire comprising a tube filled with a resilient material between the air tube and the tread. W. C. Holloway and S. Forster, London.
 1,250 (1909). Lever for replacing pneumatic tires. W. Robbott and two others, Teignmouth, Devonshire.
 1,433 (1909). Solid rubber tire with transverse cavity between the tread and base. W. J. Teufel, Stuttgart, Germany.
 1,491 (1909). Rim flanges for a pneumatic tire. E. Kempshall, London.
 1,606 (1909). Detachable rim for pneumatic tires. Continental Caoutchouc und Guttapercha Compagnie, Hanover, Germany.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 19, 1909.]

- 1,694 (1909). Attachment of pneumatic tires to the rims. J. S. Clarke, London.
 1,714 (1909). Spring wheel with elastic tire. J. Langebroek and another, The Hague, Holland.
 1,823 (1909). Non slipping tread for twin tires. M. A. Kennedy, Toronto, Canada.
 2,084 (1909). Vulcanizing process for repairing tires without removing them from the wheels. J. Cropper, Chepstow, Monmouthshire.
 [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 25, 1910.]
 2,457 (1909). Non skid stud for pneumatic tires. H. Baxter and F. Raxter, Birmingham.
 2,644 (1909). Revolving heel pad. H. Lewis, Birmingham.
 2,713 (1909). Flexible packing ring for the pistons of vacuum brake cylinders. J. E. Hopkinson, Para Rubber Mills, West Drayton, Middlesex.
 2,720 (1909). Spring wheel with rubber cushions. J. Dheyne and A. Bovy, Brussels, Belgium.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 408,784 (Nov. 9). C. J. Watts. Pneumatic tire.
 408,878 (Sept. 15). C. Vrolyk. Process of repairing tire inner tubes.
 408,908 (Oct. 19). J. Muirhead. Tire for automobiles or other vehicles.
 409,046 (Oct. 22). Roze et Cie. Detachable pneumatic tire.
 408,983 (Nov. 12). The British Muras Syndicate, Limited, and M. Dessau. Apparatus for removing materials from caoutchouc and gutta percha.
 409,169 (Nov. 17). F. Bruggimann. Pneumatic tire tread.
 409,260 (Oct. 27). H. A. Palmer. Tire.
 409,467 (Nov. 20). P. J. Viel. Pneumatic tire.
 409,487 (Feb. 18). L. Llais. Tire.
 409,564 (Nov. 24). W. von Nottbeck. Protection tread for tires.
 409,631 (Feb. 22). J. B. Berlier. Leather envelope for tires.
 409,642 (Nov. 26). W. G. Y. Jones. Pneumatic tire.
 409,482 (Nov. 22). A. L. Chodorowski. Process for reclaiming rubber from waste.
 409,679 (Sept. 8, 1909). E. C. Gaillard. Changeable tread for tire covers.
 409,693 (Nov. 6). G. Giachero. Vulcanizing apparatus.
 409,729 (Nov. 23). J. S. Clarke. Tire and rim for automobiles.
 409,737 (Nov. 25). A. Metz. Process for the manufacture of products having as a base natural or artificial caoutchouc.
 409,771 (Nov. 29). L. Valour. Separation of caoutchouc from the barks of various plants.
 409,818 (Nov. 30). A. Pilard. Tire.
 409,841 (Feb. 26). A. de Montureux. Elastic tire.
 409,854 (Dec. 1). T. L. Carbone. Elastic tire.
 409,871 (Dec. 2). Etablissements Falconnet-Perodeaud. Elastic tire.
 409,704 (Dec. 3). O. Preusser. Protective tire tread.
 409,887 (Dec. 2). Madame R. Koch, Suspender.
 409,885 (Dec. 2). J. Olivet. Shoe for pneumatic tire.
 410,031 (March 4). Francois Grellon et Cie. Pneumatic tire envelope.

- 410,047 (Dec. 6). Chaulange. Elastic tire.
 410,108 (Dec. 7). R. Beien. Elastic tire.
 410,086 (Dec. 6). B. C. Swinehart. Device for holding rubber tires on wheels.
 410,109 (Dec. 7). Same. Elastic tire.
 410,124 (Dec. 7). A. Loiseleur. Fastening for tire air tubes.
 410,208 (Dec. 10). E. Janik. Elastic tire.
 410,274 (Nov. 16). E. Greiner. Elastic tire.
 410,312 (Dec. 11). R. Miessen and G. Piron. Pneumatic tire.
 410,344 (Dec. 14). A. de Laski and P. D. Thropp. Machine for weaving tire fabrics.
 410,366 (Dec. 13). A. Boerner. Elastic tire.
 410,370 (Dec. 13). P. J. Viel. Manufacture of metallic cables for tires.

[NOTE.—Printed copies of specifications of French patents can be obtained from E. Robet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

"RUBBERWOCKEY."

THE flotation of rubber plantation companies to operate in the British dominions beyond the seas, with names sometimes so strangely unfamiliar to London ears, has prompted a correspondent of an English exchange to the production of the following jingle, with apologies to "Lewis Carroll," whose "Jabberwocky" lines have amused so many youngsters of all ages:

'Tis bullig and the rubberspeca
 Do sweeney and shamble on the stange;
 All freasy are the boromex,
 And the sharket booms outrange.

Beware the Chempedaka, my son,
 The shares that rise, that cannot lose;
 Beware the Karan bird and shun
 The moistrous Semambus.

He took his Lanlang in his hand,
 Long time he Kota Bahrose sought;
 So'vested he all in Seekee,
 Then stood awhile in thought.

And as in Woodthorpe thought he stood,
 The Senawangs with wings of flame
 Came Semeling through the Padang wood
 And Tebonged as they came.

Too soon. Too soon. 'Twas after June
 The rubber boom went ficker flack;
 Before 'twas off, he with his proff
 Came Kalumponging back.

And hast thou alain the rubbershorts?
 Come to my arms, by boomish boy!
 O wild Para! My footer car
 Shall smell of rubberjoy!

TOO MUCH RUBBER AUCTION.

[FROM "THE FINANCIAL NEWS," LONDON.]

NERVOUS holders of Rubber shares are inclined to attach too much importance to the fluctuations in prices paid for raw rubber at the fortnightly sales in London. The [world's] estimated output of rubber for 1908 was 70,000 tons, and that for 1909 was 75,000 tons. Assuming that 200 tons are sold at each of the 26 fortnightly sales in the year at Mincing lane, this disposes of 5,200 tons per annum in these auction sales, thus leaving some 70,000 tons to be sold outside the auctions.

Large quantities of rubber are sold at Antwerp, at Liverpool, and elsewhere. Large lots are also sold forward by the various producing companies themselves—e. g., the Mabira company have sold forward 36 tons for 1910, the Anglo-Malay company have sold forward 30 tons for 1911; and these are not the only ones. Consequently, it is easy to see that a very small fraction of the rubber used by the world in a year is sold at the Mincing lane auctions. Indeed, it is probable that 26 fortnightly fiascos at the auctions would hardly affect the output of motors at Buffalo (New York), Toledo (Ohio), and Indianapolis (Indiana), to say nothing of the other important industries—taxicabs, cables,

surgical appliances, snow-shoes, waterproofs, etc., in which large quantities of the raw material are now employed.

SOME HEATED IMAGINATIONS.

THE approach of the "silly season" in London, usually most evident in the letters written to the daily newspapers (and printed in them) about midsummer, has been preceded this year by the extraordinary rubber craze, which seems to have permeated every walk of life. This has led to the appearance in the whole British press—daily and otherwise—before the approach of summer, of "news" and comments relating to rubber most amazing to those who know the difference between rubber and the musical glasses, for example, or the law of gravitation. Here is an editorial article from *The Rubber Investor*:

AKRON.

A paragraph has been carefully distributed through the usual telegraphic agencies to the effect that there is a boom on in rubber in the United States. This no one will deny. It is further stated that the town of Akron, which is the home of the tire industry, is using 15,000 tons of rubber a year. People believe these silly stories. If one town in the United States used 15,000 tons of rubber a year, then the whole consumption of rubber in that country would amount to about 60,000 tons a year, if not more. This we know to be absurd. The United States takes a great deal more rubber than any other country, but it uses most of its fine hard cured Para in the manufacture of overshoes. English people call them goloshes, and avoid them as they would the devil. But then English people do not suffer from the same winter climate as the Yankee. No American ever dreams of going outside the house without his rubbers. They are just as indispensable to the Russian as they are to the Yankee, and the United States Rubber Co. has the practical monopoly of the manufacture in both countries. Its consumption of rubber is about 10,000 tons a year. It is just as well to mention this, and so pour a little cold water over the heated imaginations of the journalist who writes scare pars [paragraphs] for the press agencies.

There are no authentic statistics of Akron's consumption of rubber, but the figure is very large, due to the astonishing recent increase in the demand for tires, largely manufactured there, which is the explanation of the great advance in the price of crude rubber everywhere. The total consumption of rubber in America in 1909 was about 30,000 metric tons, but since July 1 of that year (the beginning of the government fiscal year) imports of rubber have been at the rate of 50,000 tons, and the rate has been vastly larger during the past three or four months. And the increased imports cannot be explained by any evident growth in the footwear trade.

By the way, it is news to America that any monopoly exists here of the Russian trade in rubber footwear. The United States Rubber Co. do not manufacture any goods abroad, and the total exports of "goloshes" from America to Russia last year, by all producers, were recorded by the customs as 1,676 pairs, of the value of \$997 [= about £204]. Whose "heated imaginations" do these figures "pour a little cold water over"?

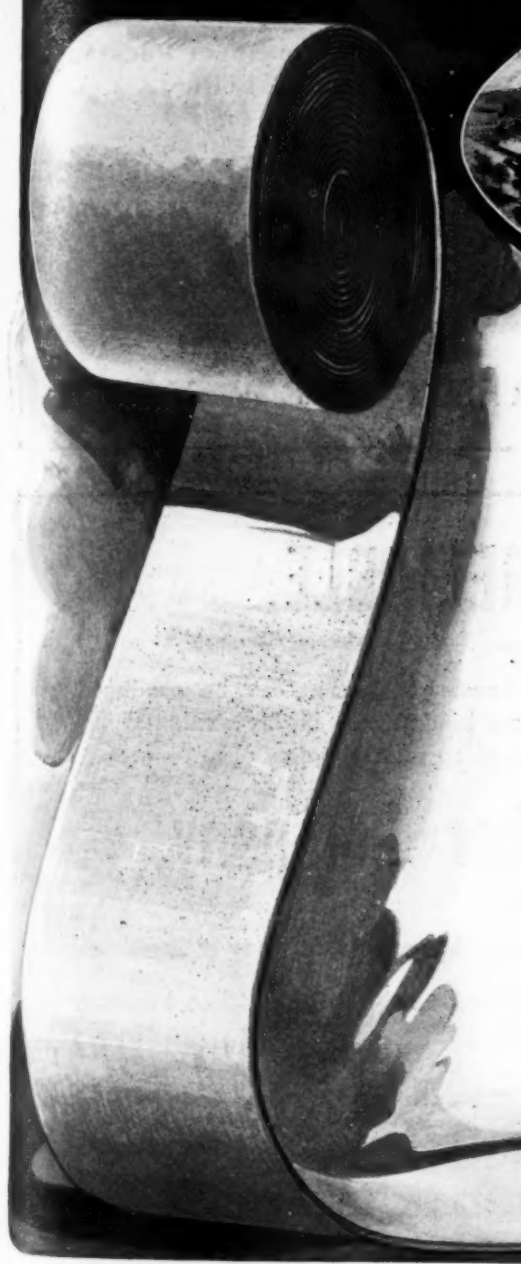
And here is the beginning of a prominently placed article in *The India-Rubber Journal*, which, by reason of its venerable age, should know better:

THE BRAZILIAN END OF THE BOOM.

Our latest advices from Para mention the state of affairs there as somewhat resembling the plight of the Australian coastal towns in the times of the gold rush. Local facilities are suffering from the absorption of a large part of the able bodied working population by the rubber collecting camps. Wages are higher than was ever known before, and so great is the excitement that even the tram drivers, and conductors at Para have deserted. The populace have signified their displeasure by instituting a holocaust of trams!

The Para newspapers reaching North America evidently have been censored, since no reference occurs in them to the destruction of their street railway service. By the way, does our contemporary, in mentioning a "holocaust," use the word in the sense of a religious burnt offering, or of a great sacrifice of life by accident, or in some other sense not recorded in the dictionaries?

GOODRICH RUBBER BELTING



THE LARGEST FACTORY AND MOST COMPLETE
EQUIPMENT IN THE WORLD FOR THE
MANUFACTURE OF RUBBER GOODS

PINNACLE BRAND.—An extra high quality belt of friction-surface style. A better belt cannot be produced. Recommended for main drives and other places of hard usage.

MARATHON BRAND.—A light flexible friction-surface belt for planers and other high-speed wood-working machines. It does the work and does it right.

STERLING BRAND.—A belt of special construction, particularly adapted to mine elevators and oil well drilling.

GOODRICH AXLE LIGHTING.—Of special design, for railroad axle lighting. Being used successfully by many prominent railroads.

STANDARD GRADES.—**PILGRIM** and **ROB ROY** for all general work.

CONVEYOR BELTS FOR ALL CONVEYING USES
LOGLIFE BRAND for hard duty. **ECONOMY BRAND** for ordinary duty.

THE B. F. GOODRICH COMPANY
AKRON, OHIO

NEW YORK BELTING AND PACKING CO., Ltd.

MANUFACTURERS OF A COMPLETE LINE OF HIGH GRADE MECHANICAL RUBBER GOODS

Including Cobb's Piston & Valve Rod Packing, Indestructible White Sheet Packing,
Vulcan High Pressure Spiral Packing, "1846" Para Rubber Belting,
Magic Garden Hose, Air Brake, Air Drill, Steam,
Suction, Water Hose, etc.

Original Manufacturers of Interlocking Rubber Tiling.

Nos. 91-93 CHAMBERS STREET, NEW YORK

ECCE SIGNUM.



THOROUGHLY RELIABLE.

The policy of furnishing only the finest goods that can be produced with perfect materials, latest and best machinery, and highly skilled workmen of long experience, has been, is now, and will continue to be, the policy of

The Mechanical Rubber Company, CHICAGO, ILL.

Branch Store, No. 1810 Blake Street, Denver, Colo., where we carry a full line of goods.

Manufacturers of all kinds of rubber goods for mechanical uses—Hose, Belting, Packing, Gaskets, Bicycle Tires, Specialties, Moulded Goods, Etc., Etc.

If you are unable to satisfy your trade with goods you are supplying,
If you are in search of good goods at fair prices,
If you cannot get quick deliveries,
If you are not getting fair value for your money,
IN ANY EVENT,

SEND TO US FOR SAMPLES AND
QUOTATIONS.
WE CAN SUIT YOU EVERY WAY.

FACTORY, GRAND AVE. & ROCKWELL STS

THE MECHANICAL RUBBER CO., 230 Randolph St., Chicago, Ill.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

DESPITE the difficult situation caused by the continued high price of raw rubber, it cannot be said that there is any falling off in trade. Indeed, quite the opposite is the case. In one important works I visited lately there are more hands employed than at any period during the last 20 years, while over

STATE OF TRADE.

time is general, and all night work by no means uncommon. I am told by a prominent proofing firm that they are regularly working over time, and altogether there are no signs of slackness. Government contracts have a good deal to do with the activity in some cases, this being a busy season, and a mere matter of price not interfering with this class of business. Hearing a rumor to the effect that if the price of rubber went much higher a certain rubber manufacturer had decided to close his works, I made inquiries and found that the matter had been exaggerated. I was informed, however, that the question of limiting work to four days a week had been seriously considered by some of the firms, though in the present state of activity it would need very concerted action unless individual firms are to suffer by any such move. The recent fall of 2s. 6d. or more a pound in the price of fine Pará instead of the talked-of rise to 15 shillings [=£3.65] no doubt caused any negotiations of the sort to be suspended if not abandoned.

The abstention from bidding at recent London sales was described in the financial press as the silly conduct of the manufacturers who would soon be brought to their senses. That the action in London was merely an echo of what had occurred the previous week in Liverpool, when only a few hundredweight were sold out of 150 tons of African rubber on offer, was ignored by the London critics. Of course the fall in price has proved very disappointing to the City company promoter, and the last few weeks have shown a decided setback in the issue of new companies. The wild rush on the part of all and sundry to get shares has now subsided, and the revelations at the statutory meetings of three or four of the new companies will tend to frighten people off new issues.

The man who looks with mixed feelings on the situation of the moment is the rubber manufacturer who is prominently connected with some plantation or other. In his works he is considerably hampered by the necessity of notifying his customers of an advance in goods, while at the meetings of his plantation company he points with exultation to the continued rise in rubber. The fortunes that have been made are in the bulk of cases by men quite unconnected with the manufacture. It is only in the last few months that employes in rubber factories have begun to speculate in 2 shilling shares, and not always with success. It certainly must be somewhat falling for a work's manager of long experience when he has at last invested in a plantation to find the shares falling every day. Cases of this sort have recently reached my sympathetic ears, and of course to the man who has made his investment there is nothing soothing in the fact that raw rubber is getting cheaper.

This is one of the recent London flotations of more particular interest. Further, it is the first prospectus I have come across quoting **THE INDIA RUBBER WORLD** in support of some of its statements. The fact that an American company had put up a factory in Sarawak for the extraction of rubber from jelutong has been already noted elsewhere in **THE INDIA RUBBER WORLD**, but this European flotation came somewhat as a surprise. Presumably London was considered the best place to get £2,000,000, rather a large figure in connection with a process which is not patented. Some of our papers commented upon the

absence of a patent, and it was also remarked that an American process or project was usually sold at a good profit. With regard to the business of the company, which is shortly to enlarge the field of its energies, a good deal would seem to depend upon the demand for the extracted rubber. At present it is not easy to come to terms with the rubber manufacturers. Two or three qualities are on offer, with prices varying according to the amount of resin present. As crude rubber is not yet bought and sold by analysis in England, this method of doing business has not jumped into favor at once. Of course when fine Pará becomes cheaper—as is inevitable—the profits of the Malaysian company must decline, as working expenses can hardly, I imagine, be reduced appreciably. As regards the process itself, I gather that the main difference between the new plant and that which was formerly operated in one or two places in Europe is the great reduction in the loss of the volatile solvent employed. Of course the European extractors have also to pay at a much higher rate for their raw material. The main result so far of the new operations in the East has been to raise the price of jelutong to about three times what it was formerly sold at, and as the new company has a virtual monopoly of the production it seems as if the price would remain up. This may not suit the book of those who bought jelutong in the raw, because it was cheap and answered certain purposes. An important point is that the coagulation is now to be carried out by an improved method, though whether the improvement consists in an increased quantity of rubber in the crude jelutong or in a higher grade of rubber is not stated. In a recent patent of V. Scholtz the resins from bodies such as jelutong are extracted by hot carbolic or cresylic acid.

I don't remember having previously given any details regarding the English Card Clothing Co., Limited, recently organized.

CARD CLOTHING COMBINATION.

Competition between several firms led some years ago to the fusing of five or six works, all situated in the West Riding of Yorkshire. The Halifax firm of Patchett, however, remained outside, as also did the important Manchester firm of Horsfall & Bickham. The main production of all these works, I may say, is the card clothing used on the rotary carding machines of cotton and woolen mills, this clothing consisting briefly of fine bent steel points inserted in a base of pure cut sheet Pará rubber, which rubber forms the surface of canvas formed of two or more plies, which have been made adhesive by being coated with Pará rubber on the spreading machine. Although the rubber department forms only part of a card clothing factory, I think I am right in saying it is the most important part, not only as regards its details of manufacture, but at the present time, at any rate, with regard to the expenditure. In this trade no cheap rubbers, reclaimed rubbers, or substitutes are used—nothing but fine Pará—and the travelers in the commodities just mentioned are always sent away with nothing to recompense them for time and expenses. The business done is nearly all with the cotton and woolen trades, leather cards being found the most suitable for the strong flax fiber. But to speak more particularly of the Yorkshire works—it may be mentioned that, as is not uncommon in the case of combines, two or three works have been closed, and the English Card Clothing Co., Limited, now consists of the following branch works:

John Whiteley & Sons, Brunswick Mills.....	Halifax.
Charles Cain, Son & Greenwood, Croft Mills.....	Halifax.
Joseph Sykes Brothers	Lindley, Huddersfield.
Wilson & Ingham	Mirfield.
Samuel Law & Sons	Cleckheaton.

The same class of work is not carried on at all these factories; for instance, Whiteley & Sons make the pure rubber cards for the cotton trade, while Law & Sons make a specialty of the vulcanized rubber cards so largely used in the woolen and worsted mills of the Bradford district. A great deal of card clothing is sold both in England and abroad in the unfinished state—that is, without the steel points, this finishing process being carried out in many small factories by other firms who finally market the goods. John Whiteley & Sons are the largest producers of card clothing foundation in the world independent of their production of the finished cards. Their commodious mills include cotton weaving sheds, as they weave all their requirements of cloth. Some of the machinery used in connection with rubber block making was locally designed and is not to be seen figured in the catalogues of the increasing number of rubber machinery makers. That it has proved its efficiency is testified to by the reputation which the firm's products has attained the world over.

The chairman of the combine is Mr. Sykes, J. P., of the Huddersfield branch, a gentleman who has paid several visits to the cotton spinning districts of America. At one time he was closely identified with cotton spinning in England, and is considered an authority on the industry. Two other directors of the combine, who have the control of the Whiteley & Sons' works, are Mr. Whitley Thomson, late M. P. for the Skipton division, and Mr. J. R. Rawnsley. Mr. Thomson is the present mayor of Halifax.

The mottled cut sheet used for these cards is made in a different manner to the ordinary cut sheet of the rubber works. The masticator is dispensed with, the block being formed from small particles of rubber which have had no more "working" than the previous washing necessitates. At one of the branches there is a plant for the manufacture of emery wheels, which are largely used for sharpening the steel points, and in various other ways the company fills its own requirements. To conclude with a reference to the topic of the hour there can be no doubt that the high price of rubber is somewhat threatening the continued prosperity of the industry, in that it is causing users of rubber cards to turn their attention to the composition cards which are cheaper and which for certain purposes, more particularly where contact with oil is unavoidable, have already an established reputation.

A series of general papers on various industries is being given before the London Section of the Society of Chemical Industry, and on April 5 the subject was "The india-rubber industry," by Dr. P. Schidrowitz. I was unable to be present, and base my few comments on the report of the proceedings in the society's *Journal*. Whether it is advisable to attempt to cover the ramification of a whole industry in the course of an hour or so seems somewhat open to question; anyhow it leaves plenty of scope for those joining in the discussion to refer to points which have been passed over.

It is not always easy to condense a description of a technical process into a few lines so as to make it intelligible to the uninitiated, and the author in this case must be considered to have achieved success with the exception, if I may say so, of the reference to proofing, where one or two slips are noticeable. The résumé of the raw rubber industry will probably prove most interesting to the bulk of readers of the *Journal*, as it brings up to date a topic closely touching the pockets of so many.

If I started to refer in detail to the paper I should require more space than can be allotted here, and I must confine myself to one or two points raised in the discussion. Colonel Richard K. Birley seems to have been the only rubber manufacturer who spoke, and the bulk of the speakers approached the paper from the point of view of their own particular interests. The author's references to re-formed rubber were amplified by Mr. F. L.

Rawson, of the Premier Co., Limited, and later on Mr. Philip, chief Admiralty chemist, inquired how to distinguish re-formed rubber from ordinary rubber. Dr. Schidrowitz's answer to this was that he did not know whether they could be distinguished—an answer which may or may not have been of a diplomatic nature. I suppose Mr. Philip is getting nervous about the Admiralty contracts.

Mr. Walter Reid, of Velvrl fame, said that it was a pity that rubber was used for waterproof sheeting, as it produced an inferior article which lasted a year at the utmost. This must be news to contractors for Army ground sheets, and in his reply the author disagreed with the statement. Mr. Herbert Wright prefaced some important observations on the state of the plantation industry by a query as to whether the recent researches of Harries on the chemistry of rubber had any technical significance. The answer to this was in the negative. Of course the topic of synthetic rubber cropped up and the chairman, Dr. Lewskowitsch, said that synthetic rubber should be compared with synthetic camphor, scientifically a success but commercially a failure, rather than with synthetic indigo. It all depended upon how cheaply the product could be grown.

A GERMAN VIEW OF JAPAN.

[FROM THE "GUMMI-ZEITUNG" (BERLIN), JUNE 3.]

THE possibility of Japan becoming of constantly increasing importance as an outlet for the products of our industry is as generally recognized as the fact that the said country is attempting to make itself more and more independent in providing for its requirements, and to close its borders to the import trade. For this reason we may with considerable certainty expect that notice of the discontinuance of the commercial treaty now in force between Germany and Japan will be given in the near future, whereupon the said treaty will become ineffective in July, 1911. New negotiations will undoubtedly be opened at once, but it is an urgent necessity for our industry to insist most vigorously on the protection of its interests in this connection. As a basis for its future commercial treaties, Japan has recently adopted an entirely new customs tariff, showing very material increases in the duty on important articles. We publish in this issue such items, taken from the said tariff, as are of interest to our trade, and have added for purposes of comparison the duty to which the goods are subject under the present tariff. It would be very gratifying to have these new customs modified very considerably in the new commercial treaty with Japan.

GOOD TIMES ON THE AMAZON.

WHILE on a recent visit to the United States Mr. Waldemar Scholz, president of the Manaus Commercial Association, in speaking of the present conditions in the Amazon country, said:

"The high prices for crude rubber, taken as a whole, have been an excellent thing for every one in Brazil. Hundreds of rubber gatherers and outfitters that for years have only made a bare living or were deeply in debt are today prosperous. Then, too, the high price of rubber is already attracting both capital and labor, so that the state will profit as well as the individual. This is true not only of Amazonas, but of the whole valley. Our present governor is a serious, able and popular man, very much interested in building up the state. He is actively encouraging the planting of rubber, and in many ways planning help in the way of cheaper production and greater output. He is determined that capital invested in Amazonas shall not only have the same protection that it would enjoy anywhere else in the world, but that it shall have every chance to be as remunerative."

A BOOK for rubber planters—Mr. Pearson's "What I saw in the Tropics."

Some Rubber Interests in Europe.

SEMI-CENTENNIAL AT ST. PETERSBURG.

ONE of the most widely known Russian manufacturing concerns, the Russian-American India-Rubber Co., of St. Petersburg, celebrated its fiftieth anniversary on May 9-22. On this occasion the workmen received very liberal gifts in money, while the foremen were presented, in addition to such gifts, with commemorative medals. The company's officials also received medals, partly ornamented with precious stones. The company gave a festival for the officials and foremen, and an entertainment had likewise been provided for the foremen and workmen. At all these festivities the president of the company, Baron von Krauskopf, was the recipient of special honors.

In a review of the history of this important company, the *Gummi-Zeitung* points out that the business was founded by Mr. Ferdinand Krauskopf. When the first American rubber shoes appeared in the German market he at once foresaw that an important outlet for rubber shoes might be provided, especially in Russia, in view of the quite large rainfall in many parts of that country. He therefore went to America to study the details of rubber shoe manufacturing, and erected in St. Petersburg, in partnership with Mr. Leendert Smith, of Hamburg, and with Messrs. L. Heyse and Ch. Dryssen, the works which were under his management until his death in 1875.

His successor was Mr. Gustav Heyse, who died in 1909. Since 1874 unusually important services have been rendered to the works by the chairman of the board of directors, Baron F. von Krauskopf, son of the founder of the concern. He devoted his especial attention to the development of the institutions for the benefit of employes, among which are a day nursery for 300 children of workmen, a school for the workmen's children, and a recreation home for workmen. All of these institutions were still further enlarged on the occasion of the celebration of the company's fiftieth anniversary. Since 1909 the president has been assisted by Mr. F. Uthemann in the capacity of business manager and by Mr. Arthur Kraack, who entered the company's employ in 1886, as chief confidential clerk.

At the present time the ground space covered by the buildings is more than 228,500 square meters [=nearly 2,500,000 square feet], most of the buildings being four-story structures. The total length of all the stories would be about 16,000 meters in a straight line. The operating machinery requires at present 12,500 HP., and 60 steam boilers, with a total heating surface of about 69,000 square meters, generate the necessary volume of steam. The number of workmen, expressed in round figures, is 8,000. A large number of German chemists and engineers are employed in these extensive works.

NORTH BRITISH RUBBER CO. GOING TO PARIS.

THE *Edinburgh Scotsman* says: "It is announced that the North British Rubber Co., Limited, of Castle Mills, have just completed the purchase of a fully-equipped india-rubber factory in the outskirts of Paris, and that they will commence operations there almost immediately. The new works have a capacity for the employment of 1,000 or more hands, and provide ample room for large extensions.

"The North British Rubber Co., Limited, as is well known, are the largest rubber manufacturers in the British empire, employing as they do some 4,000 to 5,000 workpeople. This move has been made following on the recent increase in the French tariff, which has raised the duties on motor tires, cycle tires, cab tires, and other classes of rubber goods, in which this company do a very extensive trade, not only in France but in all other parts of the Continent.

"This event will be regarded as an object lesson in the relative

value of the systems of free trade and protection. It is possible that unless some relief is given in the way of reduced duties that the North British Rubber Co. will open factories in the other principal continental countries."

This announcement is all the more interesting in that it follows the organization in Germany of an independent joint stock company by the North British Rubber Co., Limited, with a view ultimately to manufacturing. [See THE INDIA RUBBER WORLD, August 1, 1909—page 388.]

A GERMAN RUBBER MANUFACTURER HONORED.

AMONG the birthday honors distributed by the King of Saxony recently was a signal distinction accorded to an important representative of the German rubber industry. It was the conferment of the royal Saxon title *Kommerzienrat* (counsellor of commerce) upon Herr Heinrich Brück, general director of Leipziger Gummiwaren Fabrik A.-G., formerly Julius Marx, Heine



KOMMERZIENRAT HEINRICH BRUECK.
[General Director Leipzig Rubber Co.]

& Co. This gentleman ranks not only among the most important representatives of the rubber industry in the German empire, but also among the most popular. For 46 years he has devoted his energies to the Leipziger concern, so that he has become one of the senior members of the trade, entitled to preside by right of seniority particularly over the councils of the surgical rubber goods industry.

FIFTY YEARS OF HONORABLE SERVICE.

OVER the building of the rubber manufacturing firm Dr. Heinrich Traun & Söhne, in Hamburg and Harburg, on April 24, the private flags of the company were waving in connection with the celebration of special interest to the firm and its employes. It was in honor of the fiftieth anniversary of the employment by the firm of Mr. Gustav Friebeck, stock superintendent. On the date mentioned he was retired with full pay as an acknowledgment of his merits, and as he is still vigorous many years of quiet repose doubtless are in store for him. As the doorkeeper of the same factory in Harburg, Carl Meyer celebrated his fiftieth anniversary on April 16. Christian Winckelmann, a laborer, expects to follow suit on July 19, when the living employes of the company retired with full pay after 50 years of service with the company will number 13. During the present year honors will be conferred upon 20 employes who have been in the service of

the company for 25 years, and 52 employes who have been with them for 10 years.

A VISIT TO A RUBBER FACTORY.

An interesting event was a visit paid on May 4 to the works of the North British Rubber Co., Limited (Edinburgh), by about 40 members of the Maatschappij van Nijverheid (Society for Promotion of Industry) of Amsterdam, who had left home mainly for an inspection of these works. The visitors were headed by their president, Mr. Ch. E. H. Boussevain, and were received by Mr. A. C. Baker, the general manager, and Mr. Alexander Johnston, the superintendent and general works manager. In connection with this visit the management of the company issued an attractive souvenir in the shape of an illustrated booklet descriptive of Edinburgh and the rubber factory. As indicating somewhat the extent of the rubber works, it may be mentioned that the visitors were shown in the stores raw material valued at \$1,500,000.

ARTIFICIAL RUBBER IN GERMANY.

The *Neueste Nachrichten*, of Munich, Germany, for May 1, contained the following:

"At the general meeting of the Farbenfabriken, F. Bayer, of Elberfeld, it was decided to declare and immediately pay a dividend of 24 per cent. and distribute a bonus of 213 marks [= \$40.69] per share. A report read at the meeting stated that the long continued researches for the production of artificial caoutchouc had been successful. It could not at that date be stated when the new product would be put on the market. In view of the fact that raw rubber can be obtained at a comparatively low figure, it will be necessary to overcome many obstacles." In other words it will be necessary to lower the cost of production considerably.

RUSSIAN EXPORTS OF RUBBER.

The figures herewith, for which we are indebted to the *Gummi-Zeitung*, indicate the exports under the headings given from Russia during the calendar year 1907, American equivalents being given for the Russian weights and values:

	Pounds.	Value.
Waste rubber	11,054,664	\$618,728.73
Rubber footwear	4,098,672	1,970,692.82
Other rubber goods	1,358,604	523,015.46

BETTER DUNLOP BUSINESS IN GERMANY.

The Dunlop Pneumatic Tyre Co., A.-G., at Hanau a/M., in the business year 1909, made gross profits of 1,074,534 marks, comparing with 870,460 marks in the preceding year and 829,846 marks in 1907. The net profits (including carry over) were 299,238 marks, against 233,018 marks in 1908 and 105,526 marks in 1907. The capital stock figures at 3,000,000 marks [= \$714,000].

SWEDEN.

The Kautschuks- & Guttaperchavaru-Aktiebolaget Kuntze & Comp., at Stockholm, manufacturers of and wholesale dealers in rubber goods, at the annual meeting on May 14, adopted a resolution to distribute for 1909—as for five years preceding—a dividend of 10 per cent. on the capital stock of 300,000 kroner [= \$80,400].

GREAT BRITAIN.

Rom Tyre and Rubber Co., Limited, registered in London December 11, 1908, with £5,000 capital, has been acquired by a new company, The Rom Tyre and Rubber Co. (1909), Limited, registered in London April 10, 1910, with £50,000 capital. The new company purposes combining with the manufacture of pneumatic tires the planting of rubber, cotton, and other crops in the Gold Coast Colony.

The North British Rubber Co., Limited, have been granted a warrant by the authorities of Edinburgh for constructing a subway at Viewforth to connect their Castle Mills with the recently acquired premises of the Scottish Vulcanite Co. [See THE INDIA RUBBER WORLD, March 1, 1910—page 207.]

THE PAN-AMERICAN CAPITAL.

A NOTABLE event was the dedication of the new building of the International Bureau of American Republics, at Washington, on April 26. The desirability of a permanent home for the Bureau had long been recognized, and contributions toward a building fund had been made by the United States and the Latin American republics, but the sum was not regarded by the director of the Bureau as sufficient for such a building as was needed. This was the situation when a gift of \$750,000 by Mr. Andrew Carnegie made it possible to plan a stately and artistic building ample for the purposes of the Bureau, and this has been completed and is now occupied by the Bureau.

This institution, the outgrowth of the first International American Conference, called by Mr. Blaine in 1889, has been of great service already in the promotion of a better understanding between the various American republics and a closer relation between them. With the passing of misunderstandings has come progress in the industries and commerce, and increasing wealth and intelligence. Mention of this institution is particularly fitting in THE INDIA RUBBER WORLD, on account of the fact that india-rubber is produced in nearly every one of the republics represented in the Bureau. Their combined production amounts probably to two-thirds of the total for the world.

The Bureau of American Republics not only affords the official representatives and likewise private citizens of the various republics an opportunity for intercourse, but an important special library is maintained, and a *Bulletin* published which has performed a valuable service in disseminating information regarding the various countries of North and South America. It would be well for every business man, particularly if engaged in international trade, to become familiar with the *Bulletin*.

THE ALLEGED OUTRAGES IN PERU.

CONDITIONS in the rubber producing districts of the upper Amazon, and particularly above Iquitos, continue to receive public attention in England, in connection with the affairs of the Peruvian Amazon Co., Limited. Some months ago a lengthy article in the important London weekly paper *Truth* was in the nature of a serious indictment of the company named, with respect to the treatment of the natives employed in rubber gathering by the company's agents. [See THE INDIA RUBBER WORLD, November 1, 1909—page 44.] The charges made in Mr. Labouchere's journal were at once denied categorically from the Peruvian legation in London. Inquiries regarding the matter were at once made in the House of Commons, regarding conditions in Peru but without eliciting any definite statements.

During the past month some interesting correspondence has been made public from the offices of the Peruvian company. For instance, the Dean of Hereford made a public address in which he asserted that the treatment of the company's employes had been "abominable and horrible." On receipt of a letter from the company's solicitors, the very reverend gentleman offered his apologies for having made such statements, while "misinformed on the subject." The secretary of the Peruvian company has made public a copy of a letter addressed from his office to the British government, stating that the very employes against whom the accusations had been brought had written to the chief authorities at Iquitos asking for a judicial inquiry.

The British patent (No. 27,567—1908) issued to G. Capelle, of Belgium, relates to reclaiming rubber. Vulcanized or unvulcanized rubber is regenerated by mixing it with the product obtained by distilling rubber under reduced pressure, or *in vacuo*, or with the product obtained by polymerizing or condensing the distillate from rubber, whether obtained under normal or reduced pressure, or *in vacuo*. Soda may be added to reduce the amount of free sulphur.

LIVERPOOL RUBBER CO. CHANGES.

AN occasional correspondent who for some years was connected with the Liverpool Rubber Co., Limited, favors us with the following details of the history of that company, which are of especial interest in view of the change of control of the company reported in THE INDIA RUBBER WORLD, April 1, 1910 (page 245):

"I attended last week [The letter is dated May 11] at the funeral of the Liverpool Rubber Co., Limited. The business has been sold to another company who will continue to carry it on, but unlike the old the new company will be a private affair.

"It frequently occurs that a business in the old country establishes a branch manufacturing in the new, but the reverse was the case here; the new company was the root, the old country the branch. The Canadian Rubber Co. of Montreal had built a works and had begun business, but they found they had cut a bigger chunk than they could chew. The output of the works was larger than Canada in that day could absorb, and with a view of selling their surplus production, they sent a traveler over to Europe. His name was William Somerville, and the name still remains in the firm known as William Somerville's Sons.

"The man came here and did a fair business—so good, in fact, that the Canadian company resolved to start a branch works on this side. Liverpool was selected, land was purchased and a works was erected, the works manager of the Canadian company, a Mr. Hibbert, coming over and planning them out. By this time, however, the Canadian company had changed its mind. They found trade at home took all their attention and they resigned the works.

"Mr. Somerville, however, determined to continue them. He completed the works, got a man named Burnham, who understood manufacturing, from America, and began operations. He was stopped by a difficulty which in the light of today is interesting. The Hayward Rubber Co., of America, had disposed of their patents on this side to Messrs. Charles Macintosh & Co., and the patents included the making of shoes. [Now, over fifty years after, Charles Macintosh & Co. become practically the owners of the works they then tried to stop.] Happily the patents had nearly expired, and progress was delayed until they were out, when work was begun in earnest and has never since ceased.

"Mr. Somerville, finding that the business was beyond his means, applied to wealthy Liverpool capitalists and a limited company was begun in 1862, being one of the first under the new "limited companies" act. The sole business at first was shoes, but it was soon determined to extend operations. A large new building was put up and the making of mechanicals, hose, belting and thread was commenced. It was thought necessary to have a man of more general manufacturing experience than Mr. Burnham, and Mr. Robert Storey was induced to come from the Russian-American India-Rubber Co., at St. Petersburg, and take charge in Mr. Burnham's place. Mr. Storey continued to be manager of the company until 1874, when he resigned in favor of his son who was manager until 1886.

"To revert back, about 1865 Mr. Somerville and the directors of the limited company had some disagreements and he resigned all active oversight over the business. A new board had been appointed, and the chairman of this new board took the control of the commercial side of the business and retained it until his death in 1886. His health latterly not having been good a deputy had been appointed in 1884 and on Mr. Taylor's death he continued to control the commercial side until he resigned in 1895.

"Mr. Henry G. Tippet, who had been elected to the board in 1886 and made chairman in 1888, became sole business

manager in 1895. The company was reconstructed, on a broader basis, in 1894, new articles of association being registered on June 16, in that year. About 1903 Mr. Tippet gave up all detail work, though remaining chairman, to Mr. Lace, one of the staff to whom succeeded Mr. Eccles. After the resignation of Mr. Storey, Jr., in 1886, the manufacturing was in the hands of Mr. S. H. Foden until 1897, when he resigned and was made a member of the board. An American succeeded him for a short time, but in 1899 Mr. Wild was appointed and remained until 1909. Mr. Davis is now in charge of the works.

"Financially the early years of the business were poor. Much money was lost in getting the work in order, and from the bad debts which so often fall to the lot of a new concern trying to push trade. About 1870 matters had, however, settled down, and from then until about 1897, with one or two slight breaks, very fair dividends—7½ or 10 per cent.—were paid. From 1898 the record has been poor. The dividend on the ordinary shares has never been above 2 per cent. and usually nothing. The shares fell till from being at a premium of about 40 per cent. they touched a discount of about 75 per cent.

"By the present sale, which means a discount of 20 per cent., some of the recent buyers will have done well. One block of about 400 shares was bought for about £500 not three years ago, and will now realize about £1,600. The older shareholders will suffer, but the sale is on the whole a wise one. Under new control better days equal to anything in the past may be before it."

[NOTE.—A report from another source is to the effect that the terms under which the new company gains control of the old is the for each ordinary £1 share a preferred share of £1, debenture stock of £1, and about £1 in cash, or a total of nearly £4.]

GERMAN RUBBER GOODS PRICES HIGHER.

[FROM THE "GUMMI-ZEITUNG," BERLIN, APRIL 29.]

ADVANCES in the prices of automobile pneumatic tires are the most recent result of the continued rise in the crude rubber market. After a more or less considerable advance in the prices of nearly all rubber goods, manufacturers were likewise compelled to decide on an advance of from 5 per cent. to 10 per cent. in the prices of automobile tires. It was to be expected that such a step would be necessary and it appears rather surprising, in fact, that the advance was restricted to the above mentioned small figures. The reason, may, perhaps, be found in the desire of manufacturers not to deal too harshly with the automobile sport, now in a flourishing state of development, and with the automobile industry which is at present slowly recovering from the effects of the recent financial and commercial panic.

The manufacturers of rubber covered canvas and flax woven hose have also recently joined in the advance in the prices of rubber goods. The latest issue of their discount lists show the advance to amount to about 5 per cent. to 10 per cent.

An announcement issued by the various works engaged in making insulating tape proves that an advance in the prices of all rubber goods is at the present time an imperative necessity, unless goods of inferior quality are substituted for the standard goods sold in the past. The price of insulating tape, which was exceptionally unfavorable for manufacturers, has been advanced 10 per cent.

Hard rubber is likewise advancing, prices of hard rubber goods having advanced 10 per cent. since the middle of April. Advances of 10 per cent., to be in force on and after April 15, have also been announced for cycle fittings and materials for cycle repairs, solid rubber tires, and the like. The advance consequently extends to all lines of the rubber goods trade, and although it was of course, to be expected, there has never before been such a general advance in the rubber trade.

GARE'S WASTE RUBBER PROCESS.

THE process brought out in England by Gare for utilizing rubber waste is now protected by patents both at home and abroad. In Great Britain and in Germany the grant of the patents was strongly though ineffectually opposed. More recently a patent has been granted in the United States, to obtain which a visit was made to the country by Mr. C. J. Grist, of London.

Mr. Thomas Gare, the inventor of the new process, is well known in England as a clever and indefatigable worker in the direction of the utilization of wastes. Some years ago he turned his attention to waste rubber and came to the conclusion that "reclaiming" is not necessary. Mr. Gare is not a chemist, nor had he at that time experience in rubber, but he started experimenting which culminated in this process.

The Gare process, in short, consist in taking waste rubber, grinding it by means of special grinders, which he has invented, into the condition of a very fine and homogeneous powder. Afterwards this powder is placed in a cold mold; then pressure is applied for the purpose of expelling all air. Finally the mold and the powdered rubber waste contained are heated up to a temperature of about 400° F.

The difference between the above methods and those known



CHARLES J. GRIST.

to rubber manufacturers (except the high temperature) will not be apparent at first sight; but there is one very great difference—i. e., the applying of pressure to the mold *before* the application of heat. Up to the introduction of Mr. Gare's process all rubber manufacturers had looked upon the reheating of waste rubber as a vulcanizing process and considered that nothing but a vulcanizing action—i. e., some chemical action between the sulphur and the rubber—could take place.

The vulcanizing process is very little understood even by the foremost chemists. Mr. Gare heated waste rubber far above the vulcanizing temperature—i. e., 400 to 450° F.—and yet the goods made by his process show no signs of over-vulcanization, and are as good and in some cases even better than they were when first compounded and vulcanized.

The proof of this is that there is now a company of £150,000 capital in England which has more orders for mechanical rubber goods, such as tires, valves and the like, than it can turn out. Besides there exist two smaller companies, licensed by this company, operating successfully. A powerful German syndicate has obtained the control of the Gare patents for continental Europe.

Some eighteen months ago Mr. C. J. Grist, who has had nearly a quarter of a century's experience in rubber and vegetable oils, and who is a Fellow of the Chemical Society of Great Britain, was asked by a strong financial group in England to investigate the process and he reported that he considered the inventor had by his systematic and untrammelled line of experiments hit upon a method by which waste rubber could be remade into goods without being revulcanized, or in fact, any chemical action taking place between the sulphur and rubber contained in the waste, although the material was raised to a temperature far above the vulcanizing period.

He stated as his opinion that this was caused by the fact that Mr. Gare pressed out all air from the material and the mold before heat was applied. Mr. Grist analyzed the powdered waste and the finished goods and found no chemical difference between them, although the temperature had been raised to over 400° F., thereby establishing the fact, in his opinion, that chemical action between sulphur and rubber could not take place except where free oxygen was present.

The effect of the heat during the process is to accomplish the perfect mechanical fusion of the particles of powdered vulcanized waste rubber. This he maintains is new to the manufacturer, and also to the chemist. That it opens up a fresh field of industry is obvious, and its importance at the present time, when rubber is at such a high price, cannot be gainsaid.

Mr. Grist's opinion has during the last few months been backed by that of the well-known German chemical rubber expert, Dr. Fritz Frank, of Berlin, after a most thorough investigation. Mr. Grist having not only chemical but also practical and commercial knowledge of rubber, is peculiarly well suited to conduct negotiations for the working in the United States of the process here described.

GUTTA-JELUTONG IN BORNEO.

IN *De Indische Mercur* appears this note regarding jelutong, which in the Dutch is spelled djeloetoeng: "The journey to the southern and eastern Districts of Borneo, made in accordance with a previous announcement in the *Java Bode* ("Java Messenger"), by the chief of the agricultural chemical laboratory of the department of agriculture, Dr. W. R. Tromp de Haas, and the inspector of the forestry department, A. Th. L. Salverda, has made it appear advisable to take such measures immediately as will prevent the native population from continuing their present destructive methods of working the djeloetoeng trees. The terms on which the Dutch resident is to grant to the Nederlandsch-Indische Boschproducten Maatschappij (Dutch East Indies Forest Products Co.) of Amsterdam the concession to gather this product, have now been finally determined. The operations of this company will presumably also benefit the native population.

"In addition to the supervising force to be employed by the company, the government probably will also appoint inspectors whose duty it will be to guard against the use of injudicious methods of gathering gutta-percha on the part of the Dyaks. The first-named official has also visited Sarawak, where the aforesaid company is already engaged in working the djeloetoeng trees, which are not found in groves in that territory and South Borneo, but interspersed among other growths."

A writer in an earlier number of *De Indische Mercur*, in an article on the Malaysian Rubber Co.—which company has been reported on in THE INDIA RUBBER WORLD—doubted whether the use of any coagulant for gutta-jelutong could be monopolized in Dutch Borneo. The editor of *Mercur* comments: "If a constant supply [of jelutong] is to be insured, the only available means will be planting. However, if such cultivation is to be a paying enterprise, the market price of the product will have to advance quite considerably."

Vulcanized Carriage Cloth.

RUBBER covered cloth for upholstering seats and covering the tops of automobiles and other carriages, as it comes from the calender, is of a dull dead black or brown color, similar to the finish found usually on rubber boots and rubber blankets. While this sort of finish is suitable for some classes of work, most users require cloth with a small raised design or impression, to add to the appearance of the made up article. In compliance with these requirements, four styles of impressions are rolled in, from which to choose.

1. The pinhead pebble. The name describes it quite well. The cloth looks as though it were just covered with pinheads scattered every way about 1-32 inch apart.

2. Long grain. This grain is quite popular with the automobile body manufacturers, and it looks as though marked all over with the point of a pin, apparently no regular design being carried out.

3. English. The English grain is gaining rapidly in popularity. The raised lines are about 1-16 inch wide by 3-4 inch long, and all run one way; that is, no two lines cross. It might remind one living near salt water of the rills left in the sand by the action of the waves when the tide falls.

4. Flat grain. This is the hardest of all to describe. The lines are about 1-16 inch wide and very short and crooked, being scattered over the cloth close together and running every way.

In order to give the cloth this finished appearance it is run

through a mill having two steel rolls about 18 inches in diameter and about 5 feet long. The top roll is engraved the reverse of the design that is to be desired on the cloth. Generally this is rolled in with a knurling tool, but sometimes a secret process is used, the main point of which is that the work is done by an etching acid that eats that part of the steel roll that is not covered with wax.

The bottom roll is of the same diameter as the top one, but the surface is a layer of compressed paper. To make the bottom roll have impressions that will just match the top roll is imperative; therefore the top roll is heated and the two rolls squeezed together, rolling the impressions into the lower or paper covered roll. This paper impression is called the matrix.

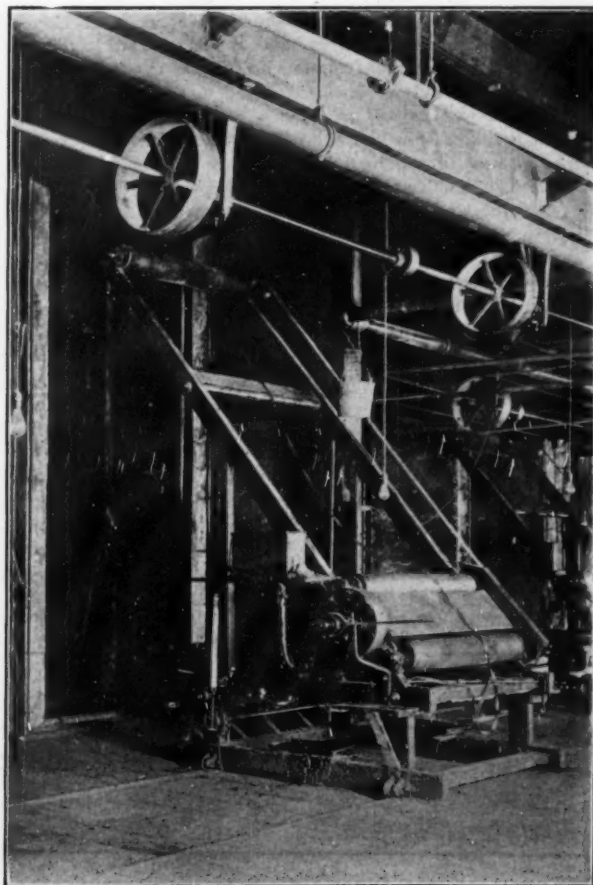
The cloth in 100 yard lengths taken from the calender is put on an arbor in the front of the machine and then fed through, automatically winding up on an arbor at the back of the rolls. Although the compressed paper covered roll is nearly as hard as the steel one, still when the cloth comes out the impression is on the rubber side only, leaving the cloth back perfectly smooth.

As for the vulcanizing process: The rolls of impressed cloth are loaded upon a truck made especially to carry six rolls—three on each side, supporting them by the ends of the arbor through each roll—and taken to the vulcanizing room.

The two machines shown in this room are for varnishing and



DRY HEATER FOR CARRIAGE CLOTH.



VARNISHING AND FESTOONING MACHINE.

carrying the rubber cloth to the vulcanizer. The cloth goes under the varnish rolls, then up to the top of the machine. Here it is transferred to a traveler that carries it into the vulcanizing oven. The cloth then goes over the edge of the machine, and when near the floor is again caught up by the traveler and a second loop carried into the vulcanizer. This is continued until that section of the oven is full. The machine is then pushed to the next section, and the same operations are continued.

At the extreme left corner of the room is the door that opens to the vulcanizing room, and as there is a fireproof wall between the two departments the danger of destroying the finished cloth, should fire break out in the vulcanizers, is practically nil.

FRANK B. LUCAS.

Bridgeport, Connecticut, June 4, 1910.

ANOTHER AMERICAN BALATA FACTORY.

THE growing employment of balata belting in the United States, in which country, by the way, this class of goods did not come into use to an important extent until several years after its merit had become recognized in Europe, has led recently to plans for the manufacture of such belting on this side of the Atlantic. In spite of the high duty on imports, it is stated that at least \$1,000,000 worth of balata belting is sold annually by European manufacturers in the United States. These imports are mainly from Great Britain and Germany.

Announcement is made of a combination of German and American capital for the establishment of a great balata belting factory in the United States, under the corporate style of Victor-Balata and Textile Belting Co., with the idea of putting up buildings and equipment, at an expenditure of \$500,000, at Easton, Pennsylvania, located about 67 miles north of Philadelphia, on the Delaware river, and connected with the outside world by four important railway lines.

The American interest in the new corporation is represented by Charles E. Aaron and John R. Stein, respectively president and treasurer of the New York Leather Belting Co. (No. 51 Beekman street, New York), pioneer importers of balata belting into the United States. The German interest is represented by members of the important firm C. Vollrath & Sohn, manufacturers of balata and other machinery belting at Blankenburg (Saxe-Weimar), Germany, among the largest manufacturers in the world of textile machinery belting, and making a specialty of balata belts. The proprietors of the last named firm are Wilhelm and Albert Vollrath. These gentlemen will be interested in the new undertaking, together with Edwin Vollrath, a son of the first named, who will make his home permanently in the United States and become the active head of the company. The installation of the Easton plant will be under the personal supervision of Mr. Wilhelm Vollrath.

The officers of the new company are Charles E. Aaron, president; Edwin Vollrath, secretary; and John R. Stein, treasurer. It is expected that the installation of machinery in the new plant will be begun in September and that the same will be in operation by the end of October.

All the machinery for the operation of the important Vollrath

factory in Germany has been constructed behind closed doors in that establishment. Workmen who know the secrets live and die in the employ of the concern. Specially woven cotton duck is also made in this plant, on looms and by processes which never have been seen by visitors under any pretext. The machinery complete for the manufacture of balata belting, as well as for the weaving of the duck, is being constructed in Germany for shipment to the United States at the earliest possible date. The first printed reference to this new American enterprise appeared in THE INDIA RUBBER WORLD, January 1, 1910 (page 113).

CHUTE'S NEW DERESINATING PROCESS.

THE chief feature of a newly patented process for extracting rubber, particularly from such plants as the Mexican guayule, is the deresination of the shrub after grinding it dry and subsequently extracting the rubber from the wood in the usual way by grinding in water.

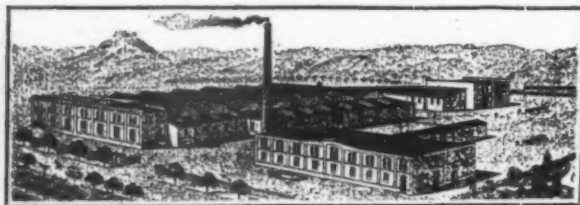
It is claimed that by first extracting the resin from the wood by the use of solvents for resin which do not attack the rubber, such for instance as alcohol, ethyl acetate, and acetone, the subsequent separation of the wood and rubber is facilitated, as the resin adheres to both gum and wood, while the rubber will cohere together and easily separate from the wood if not made to adhere to it by the presence of resin. The resin and solvent are recovered and to completely do this the water with which the wood is ground may be distilled for the recovery of the solvent after the fiber and rubber are separated. The wood is ground dry and solvent applied in a tightly closed receptacle. After the resin is removed the wood is placed in the usual pebble mill.

The United States patent for this invention, granted to Harry O. Chute and Frank L. Randel, of New York (No. 957,495—May 10, 1910), comprises in its specification twelve claims, of which the most comprehensive is—

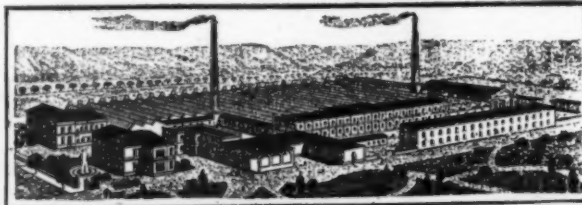
9. The process of preparing rubber which comprises deresinating a crude vegetable material of the character described containing rubber by a volatile solvent adapted to extract resin, but having substantially no solvent power for rubber, separating the rubber from such material by maceration in the presence of water, and thereafter recovering the solvents by fractional distillation.

Other claims relate to the deresination only, and others specify ethyl acetate and alcohol as the solvents, but all seem to contemplate grinding the wood dry, putting into an airtight extracting vessel, extracting the resins with alcohol or similar resin solvents, then placing the ground wood in the ordinary pebble mill to extract rubber in the ordinary way. The claim is made that by this method the extraction of the rubber from the wood is facilitated and a rubber free from resin is produced which is of high grade.

The same process is covered by the Mexican patent, issued to the same parties, No. 9441, dated August 5, 1909, the date of application for the Mexican patent being the same as in the United States.



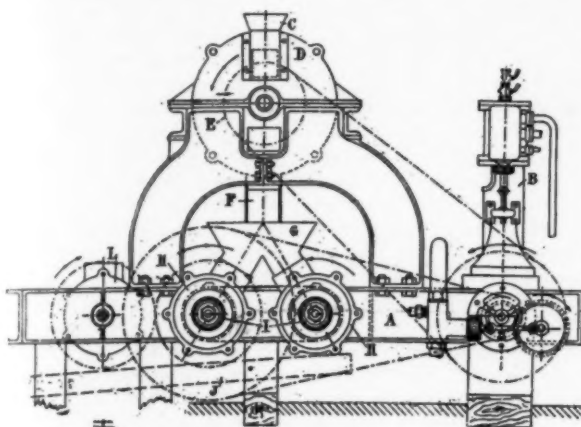
WORKS OF C. VOLLRATH & SOHN, BLANKENBURG.
[The Balata belting factory proper.]



WORKS OF C. VOLLRATH & SOHN, BLANKENBURG.
[Textile belting plant and weaving department.]

RUBBER EXTRACTING MACHINES.

THE recent utilization to an important extent of rubber yielding species formerly not recognized as having commercial value has been due to the discovery of processes of securing their latex and its coagulation differing from those employed, for example, on the Brazilian *Heveas*. If the production of rubber from the Mexican guayule depended upon such methods as are employed on the Amazon, the trade would yet be without any general knowledge of the merits of guayule. There are on

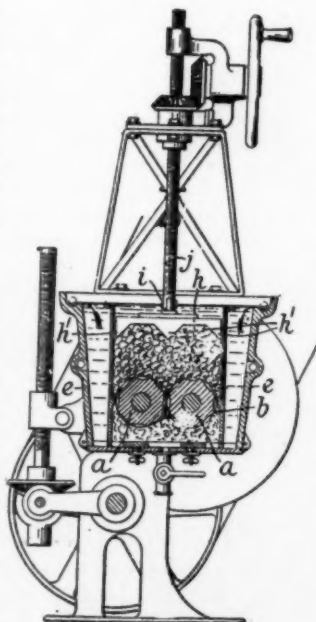


THE GUIGNET MACHINE.

[Invented by Leon Guignet, of Lyons, France. French patent No. 399,896 (July 9, 1909) granted to Société pour Exploitation du Caoutchouc au Congo.]

other continents many plants containing rubber, but not always capable of being worked at a profit, which of late have been the subject of much study by inventors, with the result that new mechanical devices have been developed that have appealed strongly to investors. Among the references to such devices that have been published may be mentioned articles in THE INDIA RUBBER WORLD March 1, 1910 (page 202), and June 1, 1910 (page 312). The following inventions may be mentioned as having specific interest just now.

THE machine devoted to Leon Guignet is designed particularly for extracting rubber from vines, but further for purifying the rubber. The machine is planned for use in the localities where the vines and shrubs grow. Described briefly, it is a crusher which reduces the rubber containing wood or bark to a paste; then a machine for tearing and agglomerating the particles that make up the paste to free the bits of wood. This done, any water and other particles are



MURAC-DESSAU MACHINE.

[British patent 24,438—1908, to British Murac Syndicate and Morland M. Dessau, of London.]

floated away. This agglomerating machine is a drum in which revolves a core shaped like a truncate cone. This core is provided with screw shaped teeth and the sides of the drum in which it revolves are corrugated. The idea is that by alternately pressing the paste together and then tearing it apart while it is subjected to the curing of water, it is purified.

In the line of washing lower grades of crude rubber for the market is a machine which is the invention of M. M. Dessau, of the British Murac Syndicate, of London. It is something like the two roll rubber washer, with the addition of an enclosing watertight frame into which is fitted a platen or piston operated by a screw which forced the rubber into the rolls, the platen being arranged so that it oscillates and thereby produces a continuous surging in the water, preventing impurities from settling to the bottom of the tank.

RUBBER PRODUCTION OF THE AMAZON.

THE amount of rubber produced in the Amazon region for the last two crop years is stated in detail in a report by the imperial German consul at Pará, from which these figures are compiled:

STATE OF PARÁ.			
		1907-08.	1908-09.
Rubber	..... tons	9,428	10,457
Caucho	.....	857	1,070
Total	.....	10,285	11,527

STATE OF AMAZONAS. [Including the Federal territory of Acre.]			
		1907-08.	1908-09.
Rubber	..... tons	16,771	16,587
Caucho	.....	4,969	5,270
Total	.....	21,740	21,857

REPUBLIC OF PERU.			
		1907-08.	1908-09.
Rubber	..... tons	3,407	3,176
Caucho	.....	1,720	1,853
Total	.....	5,127	5,029

SUMMARY.			
		1907-08.	1908-09.
Rubber	..... tons	29,606	30,220
Caucho	.....	7,546	8,193
Total	..... tons	37,152	38,413
Total	..... pounds	81,905,300	84,685,300

The first point of general interest in these figures is the fact that the yearly increase of production is so slight, while the world's demand for rubber grows more pressing all the while, and prices constantly climb higher.

Another fact worth mentioning is that such increase as is shown is relatively greater in respect of caucho than of *Hevea* rubber. All over the Amazon rubber region caucho trees are being found nowadays, and the *seringueiros* are learning to deal with this product. As will be seen, Peru is now shipping more rubber than caucho, for which reason Pearson's "Crude Rubber and Compounding Ingredients" has discarded the term "Peruvian rubber" as applied to caucho, and used it descriptive of the *Hevea* rubber shipped from Peru.

Over a thousand tons of caucho were produced last year in the state of Pará, where, only a few years ago, this grade of rubber was not known to exist. There is an increasing output likewise up the river, in Brazilian territory.

It speaks well for the persistence of the *Hevea* rubber supply that the yield of Pará state—the region first worked for rubber—not only maintains its output, but shows a notable increase. Amazonas and the Acre, on the contrary, shipped less rubber in 1908-09 than in the preceding crop year.

A BOOK for everybody interested in tires—"Rubber Tires and All About Them"—this office.

THE COMING RUBBER EXHIBITION.

THE International Rubber and Allied Trades Exhibition, 1911, will be held on June 28 in the Royal Agricultural Hall, Islington, London. Not only is this building admirably equipped for exhibition purposes—with spacious club, lecture and dining room—but it is more accessible from all parts of London than the building in which the first great rubber show was held. The suitability of Agricultural Hall for exhibition purposes is shown by the fact that for thirty-one years the Stanley Show—of bicycles and accessories—has been held there.

A matter of first interest in relation to next year's rubber exhibition is that the management is to be the same as that under which the notable success of last year's show was scored. Again the president is to be Sir Henry A. Blake, C. C. M. G., and the chairman of the advisory committee Colonel William J. Bosworth. Mr. A. Staines Manders again is organizing manager.

The show this year is to be under royal patronage, his Majesty George V, while the Prince of Wales, having signified his willingness to become Patron. This is to be taken as a signal expression of the interest that the King takes in the prosperity of the British empire and its colonies.

From every source from which support was derived for the exhibition two years ago evidences of greater interest in the 1911 exhibition are being received. Naturally in the first instance the exhibition was regarded by many as experimental, but the great success achieved proved the wisdom of this enterprise, and the practical results attainable. It appears, therefore, that not only a larger number of exhibits may be looked for next year, but a greater variety of exhibits. In the 1908 show most of those participating were interested in planting, or the production of forest rubber. The organizing manager is able to announce already a very liberal amount of support from the manufacturing interest.

Most of the leading British rubber manufacturers have consented to serve on the exhibition committee, and a number have reserved exhibition spaces. The Central Union of German Rubber manufacturers has officially approved of the exhibition and recommended to the authorities that the German colonies be well represented. In the line of this suggestion the Kolonial-Wirtschaftlichen Komitee have appointed Professor Dr. O. Warburg as commissioner.

The plan of the exhibition, as last year, embraces plantation rubbers of every description and illustrations of processes of production; likewise wild rubber and processes employed in connection with them. Included under these heads are gutta-percha, balata, and the like. These exhibits will embrace botanical specimens and all the various utensils and machines required for the preparation of rubber, together with all of the requisites for rubber estates, wild or cultivated.

The manufacturers' section will be open for machinery, molds, utensils, and so on, employed in making rubber goods of whatever class. Room will be provided also for chemicals and fillers used in the rubber manufacture, including rubber substitutes and reclaimed rubber. Fabrics and all other materials other than rubber used in connection with this industry also will be included.

A separate class will be opened for the literature of the rubber and allied trades. The exhibition offices, from which detailed information may be had, are at 75, Chancery Lane (Holborn), W. C., London.

An interesting exhibit in the way of Amazon rubber will be a single ball (*pelle*) weighing a metric ton [= 2,046 pounds], sent by the Alves Braga Rubber Estates and Trading Co., Limited, of Brazil.

On June 8 a meeting of shareholders of the Liverpool company was held to comply with the law relating to voluntary liquidation of companies; preliminary to a reorganization of the business, under the name New Liverpool Rubber Co., Limited.

THE GUAYULE PRICE CONVENTION.

EARLY in the past month notice was given of an intended convention of owners of guayule factories, and of growers of guayule on a large scale, to be held at Torreon on June 15, with the object of discussing the best form of grading guayule rubber so as to secure for it a price in proportion to its actual value as compared with other grades of rubber in the world's market. One proposal made was that a commission be named which should fix a minimum price for the sale of guayule rubber, producers being obligated not to sell at a lower price than that named by the commission. There are now thirteen factories engaged in producing guayule in Mexico and of these all but four have their headquarters in Torreon. Respecting the proposed convention, the communication which follows has been received from the office of one of the Torreon companies:

TO THE EDITOR OF THE INDIA RUBBER WORLD: The conference of guayule rubber manufacturers which it was proposed to hold in Torreon on the 15th instant was called by a circular letter from the Compañia Guayulera de Torreón, S. A., one of the smaller companies in Mexico. This circular letter states that in their view guayule rubber has not been paid for in proportion to the percentage of true caoutchouc contained, and that the price has been unduly held down by speculation and by combinations or agreements of manufacturers. These ideas are not so explicitly expressed as here given, but this is the insinuation, especially with regard to combinations. All guayule manufacturers in Mexico were invited to attend the convention in the offices of the above named company, with the object of forming an agreement not to sell their product below a certain figure.

We, and several others, declined the invitation on the ground that it did not agree with our views; that we did not believe that an artificial price could be maintained in view of the competition of other grades of rubber, nor did we believe that there was any combination or agreement of buyers not to pay for guayule rubber all that it is worth in open competition with other grades.

On the 15th instant no one appeared excepting representatives of one or two unimportant factories, though we understand some of the larger factories had signified their intention to take part—that is to say, take part in this preliminary meeting which was to discuss the plan of fixing the price. The date was postponed to the 20th (today), and we are just advised by telephone that only three persons presented themselves, these being, in one case at least, minor employes sent to report. We understand that the Continental company sent a letter saying they had not heard from New York whether or not they would take part, and the Madero interests did not even write, so that it looks as if the matter is not to be taken seriously, though the local papers are giving it some prominence. The three persons present at the meeting decided to send out another circular letter, to call the proposed convention on July 5.

We do not attach any broad significance to this proposal, considering that it emanates from persons of little experience in the trade, who, under the guise of remedying an evil, are merely trying to squeeze the market.

We ask that you do not, on the basis of this letter, say anything condemnatory of the affair; our attitude toward those concerned is entirely friendly, but we think they are "barking up the wrong tree."

COAHUILA.

Torreon, Mexico, June 20, 1910.

MENTION has been made in various quarters that July 1 will terminate the period for which a number of contracts were made for the forward sale of guayule, at prices lower than the current quotations for this product for some time past.

It is stated that the plantations of *Hevea* in French Indo-China already amount to about 1,500 hectares [= 3,707 acres].

The British Rubber Craze.

THE number of companies in connection with the rubber interest brought out in London during April-May and the amount of their nominal capital exceeded largely the record of any other two months. In fact, the total is greater than for the three months preceding, of which details have appeared in former issues of this paper. What follows is not presented as a complete list of British registrations of rubber companies during these months, but only as a record of those that have come to the notice of this journal in respect of this period. The 163 new companies mentioned in this list have a combined stated capitalization of £22,937,105 [= \$111,623,421.48]. This brings our list for the year up to 294 companies, capitalized at a total of \$176,447,683.50.

It is to be noted that a considerable number of the companies registered lately are for the stated purpose of dealing with oil as well as rubber, and also that several are investment trusts and financial companies rather than planting companies proper. These deserve to be mentioned in the list, however, as their primary object is the investment of capital in rubber in some manner.

CEYLON.

Beverley Tea and Rubber Estates, Limited; April 6....	£50,000
Pindeniya Rubber and Tea Estates, Limited; April 9...	75,000
Tismoda Estates Co., Limited; April 13.....	30,000
Piccadilly (Kelani Valley, Ceylon) Rubber and Tea Estate, Limited; April 15.....	30,000
Hewagam Rubber Co., Limited; April 18.....	240,000
Doranakande Rubber Estates, Limited; April 21.....	100,000
Uva Ceylon Rubber Estates, Limited; April 23.....	60,000
Neboda (Ceylon) Rubber and Tea Estates, Limited; April 25.....	200,000
Beau Sejour (Ceylon) Tea and Rubber Co., Limited; April 26.....	80,000
Duckwari Tea and Rubber Estates, Limited; May 26.....	50,000

FEDERATED MALAY STATES.

Rubana Rubber Estates, Limited; April 6.....	£250,000
Brooklands Selangor Rubber Co., Limited; April 11....	100,000
Sengat Rubber Estate, Limited; April 13.....	170,000
Madingley (Malay) Rubber Estates, Limited; April 13.	40,000
Anglo-Straits Rubber and General Trust, Limited; April 14.....	125,000
Ayer Kuning (F. M. S.) Rubber Co., Limited; April 18.....	140,000
Anglo-Asiatic Rubber and Finance Trust, Limited; April 20.....	25,000
Klian Kellas Tin and Rubber Co., Limited; April 26..	70,000
Narborough (F. M. S.) Rubber Estate, Limited; April 27.....	75,000
New Crocodile River (Selangor) Rubber Co.; April 29	80,000
Sembilan Estates Co., Limited; April.....	100,000
British Malay Rubber Co., Limited; April.....	120,000
Harewood Rubber Estates, Limited; May 7.....	25,000
North Perak Rubber Estates, Limited; May 10.....	50,000
Peranang (Selangor) Rubber Plantations, Limited; May 13.....	70,000
Tanjong Malim Rubber Co., Limited; May 19.....	500,000
Gunong Pari Rubber Estates, Limited; May 28.....	20,000
Caledonian Rubber Estates of Malay, Limited; May 28.	34,000

OTHER MALAY STATES.

United Malaysian Rubber Co., Limited; April 2.....	£100
Pandan (Johore) Rubber Estates, Limited; April 9...	85,000
North Labis (Johore) Rubber and Produce Co., Limited; April 26.....	150,000
Majedie (Johore) Rubber Estates, Limited; April 28.	130,000

STRAITS SETTLEMENTS.

Segari Rubber, Limited, April 2.....	£20,000
Garing (Malacca) Rubber Estate, Limited; April 4.	80,000
Seletar Rubber Estates, Limited; April 6.....	90,000
Atherfield (Hevea) Rubber Estates, Limited; April 8	25,000
Jasin (Malacca) Rubber Estates, Limited; May 6....	60,000

INDIA.

Elak (Southern India) Rubber Co., Limited; April 2	£35,000
Poonmudi Tea and Rubber Co., Limited; May 27.....	60,000

BURMA.

Tenasserim Hevea Plantations, Limited; April 13....	£50,000
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DUTCH EAST INDIES.

Kalijeroek Rubber Co., Limited; in Java; April 2....	£40,000
Dolok Rubber Estates, Limited; in Java; April 4....	200,000
Djaboong (Java) Rubber Estates, Limited; April 4..	60,000
Badek Rubber Estates, Limited; in Java; April 7....	120,000
Daejan (Java) Rubber Estate, Limited; April 7.....	55,000
Eastern Sumatra Rubber Estates, Limited; April 13..	150,000
South Sumatra Rubber Estates, Limited; April 14....	100,000
Anglo-Dutch Plantations of Java, Limited; April 16..	1,500,000
Serdang (Sumatra) Rubber and Produce Estates, Limited; April 19.....	105,000
Java Pará Rubber Estates, Limited; April 20.....	160,000
Insulinde (Sumatra) Rubber and Tobacco Estates, Limited; April 26.....	100,000
Loogedee (Central Java) Rubber Estate, Limited; April 27.....	50,000
Gondang Legi (Java) Rubber Plantations, Limited; April 27.....	125,000
East Coast Rubber Estates of Sumatra, Limited; April 29.....	60,000
Waverley Rubber and Produce Estates of Java, Limited; May 3.....	100,000
British Rubber Estates of Java, Limited; May 5....	95,000
Tempeh (Java) Rubber Plantations, Limited; May 13	150,000
Bila (Sumatra) Rubber Lands, Limited; May 18....	200,000
Mandau (Sumatra) Rubber and Timber Estates, Limited; May 21.....	150,000
Marawan (Java) Rubber Plantations, Limited; May 23	55,000
Bantam (Java) Rubber Estates, Limited; May 24....	165,000
Bantardawa Rubber Estates, Limited; May 26.....	150,000
Galang Besar Rubber Plantations, Limited; in Rhio; May 27.....	150,000
Kali Baroe (Java) Rubber Estates, Limited; May 28.	75,000
Kebonso Rubber Estates, Limited; May 31.....	120,000

BORNEO.

Tanah Brunei Rubber Co., Limited; April 14.....	£50,000
British North Borneo Rubber Trust, Limited; April 18	1,000,000
Lamag Rubber Estates, Limited; April 19.....	80,000
Sablas—North Borneo Rubber Co., Limited; April 20.	300,000
Taritipan Rubber Estates, Limited; April 22.....	90,000
Brunei Estates, Limited; April 29.....	75,000
Tampassuk Para Rubber Planters, Limited; May 11.	200,000

SAMOA.

Upolu Rubber and Cacao Estates, Limited; April 19..	£90,000
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WEST AFRICA.

Keraia Rubber Estates, Limited; April 1.....	£100,000
Ilo Valley Rubber and Cocoa Plantations, Limited; April 4.....	45,000
S. E. D. Syndicate, Limited; April 4.....	1,000
Gold Coast Rubber and Mahogany Estates, Limited; April 5.....	75,000
Ilaro Rubber and Produce Estates, Limited; April 8..	80,000
Boinsu Rubber Co., Limited; April 8.....	125,000
Panni Lands and Rubber Estates, Limited; April 13..	80,000
West African Rubber and Produce Association, Limited; April 14.....	21,000
Sikassoo Rubber Estates, Limited; April 19.....	100,000
Ankobra Rubber Estates, Limited; April 20.....	50,000
West African Rubber, Oil, Gold and Store Syndicate, Limited; April 22.....	20,000
Vine and General Rubber Trust, Limited; April 23...	1,250,000
Rom Tyre and Rubber Co., Limited; April.....	50,000
Aguna Rubber and Trading Co., Limited; April 26..	100,000

GOLD COAST.

Aowin Rubber and Produce Co., Limited; May 3....	£85,000
Ayware Rubber and Cotton Estates, Limited; May 3.	120,000
Koshea Rubber and Produce Co., Limited; May 6....	50,000

SIERRA LEONE.			
Konoh Rubber and Trading Co., Limited; May 5.....	£145,000	British and Continental Rubber and Oil Syndicate, Limited; April 14.....	20,000
SOUTH AFRICA.		Anglo-Dutch Balata. Produce and Rubber Co., Limited; April 15.....	500
Rubber, Oil and General Promotions, Limited; April.....	£75,000	Congo Rubber Plantations, Limited; April 15.....	45,000
RHODESIA.		Sungei Muda Rubber Syndicate, Limited; April 15....	25,000
Lochard Estates (Rhodesia), Limited; May 6.....	£35,000	Rubber and Tea Investors' Trust, Limited; April 15..	75,000
NATAL.		Igalkande Rubber and Tea Estates Co., Limited; April 20	75,000
Tongaland (Natal) Rubber Co., Limited; May 14...	£160,000	United Rubber and Oil Investment Trust, Limited; April 21.....	255,000
BRITISH EAST AFRICA.		Sorata Rubber Estates, Limited; April 21.....	90,000
Malindi Cotton and Rubber Estates, Limited; May 27.	£90,000	Atlantic Oil and Rubber Trust, Limited; April 22....	150,000
GERMAN EAST AFRICA.		Rubber and Petroleum Trust, Limited; April 22.....	10,000
Mkumbi Rubber Plantations, Limited; April 21.....	£70,000	O. and R. Syndicate, Limited; April 23.....	20,000
Bondei Rubber Estates, Limited; May 11.....	200,000	Mamia River Rubber Estates, Limited; April 25.....	90,000
GERMAN WEST AFRICA.		Merchants' Rubber and General Development Corporation, Limited; April 25.....	75,000
Bai Rubber and Cocoa Estates, Limited; May 27....	£80,000	Premier Rubber and Oil Development Trust, Limited; April 26	50,000
MEXICO.		Rubber Planters' Oil and Investment Trust, Limited; April 26	500,000
Guayule Rubber Co., Limited; April 6.....	£400,000	Tikam Batu Rubber Co., Limited; April 26.....	30,000
Filisola Rubber and Produce Estates, Limited; April 16	120,000	Aguna Rubber and Trading Co., Limited; April 26...	100,000
Soconusco Rubber Plantations, Limited; April 19....	200,000	Matwapa Rubber Estates, Limited; April 27.....	30,000
Amistad Rubber Plantations, Limited; April 21.....	120,000	Rubber and Oil Consolidated Investments, Limited; April 4	100,000
Anglo-Mexican Rubber Estates, Limited; April 22....	805,000	Rubber, Oil and German Promotions, Limited; April 15	75,000
Santa Gertrudis (South), Limited; April 28.....	40,000	British and Foreign Oil and Rubber Trust, Limited; April 18	1,000,000
PANAMA.		Rubber and Oil Traders, Limited; May 9.....	25,000
Castilloa Rubber Plantations, Limited; April 5.....	£115,000	Rubber Land and Industrial Investment Corporation, Limited; May 19	1,000,000
COLOMBIA.		Orient Planters, Limited; May 19.....	22,000
P. P. B. Rubber Estates, Limited; April 6.....	£7,000	Odumowo Rubber and Mahogany Estates, Limited; May 21	50,000
H. and U. Rubber and Coffee Estates, Limited; April 16	195,000	A. D. T. Syndicate, Limited; May 25.....	2,000
BRITISH GUIANA.		Rebber Rubbers, Limited, May 31.....	50,000
Essequibo Tea and Rubber Estates, Limited; April 6.	£50,000	British and International Produce Corporation, Limited; May 31	500,000
Demerara Rubber Co., Limited; April 12.....	90,000		
British Guiana Balata Co., Limited; May 6.....	60,000		
David Young Rubber Estates (British Guiana), Limited; May 7	85,000		
Coverden Rubber and Produce Co., Limited; May 24.	50,000		
DUTCH GUIANA.			
Surinam Rubber Estates, Limited; May 3.....	£200,000		
Dutch Guiana Balata and Rubber Concessions, Limited; May 6	100,000		
Dutch Guiana Rubber Syndicate, Limited; April 20....	25,000		
BRAZIL.			
St. Antonio (Pará) Rubber Estates, Limited; April 1.	£75,000		
Rubber Corporation of Brazil, Limited; April 9.....	250,000		
Lagoa Rubber Plantations, Limited; April 28.....	50,000		
Pará (Marajo) Islands Rubber Estates, Limited; April 28	125,000		
Javary Rubber Estates, Limited; April 29.....	350,000		
Envira (Brazilian) Rubber Estates, Limited; April 29	85,000		
British Amazon Rubber Estates, Limited; April 29...	400,000		
River Acre (Brazil) Rubber and Finance, Limited; May 6	20,000		
Lafayette Rubber Estates, Limited; May 26.....	150,000		
PERU.			
Iquitos Rubber Syndicate, Limited; April 11.....	£20,000		
ECUADOR.			
Caamano Tenguel Estate, Limited; April 15.....	£300,000		
El Oriente Rubber Estates, Limited; April 16.....	250,000		
BOLIVIA.			
Anglo-Bolivian Rubber Estates, Limited; April 13....	£125,000		
GENERAL.			
[Including companies for which no region is named in the data reaching us.]			
A. R. T. Syndicate, Limited; April 2.....	£1,000		
A. G. Syndicate, Limited; April 5.....	2,505		
Mid-East Rubber Investments, Limited; April 6.....	400,000		
E. and W. Rubber, Limited; April 6.....	10,000		
Rubber Planters' Trust, Limited; April 11.....	31,000		
International Rubber Trust, Limited; April 12.....	25,000		
International Rubber Finance Syndicate, Limited; April 13	50,000		

MR. RYAN'S INTEREST IN THE CONGO.

BEFORE sailing for Europe recently Mr. Thomas Fortune Ryan, of New York, authorized the publication of a statement which is given here in part. Mr. Ryan has been mentioned in these pages already as being interested in the American Congo Co.—organized for exploiting rubber—and also in the important mining concessions granted to Americans by the late Leopold, King of the Belgians. Mr. Ryan said:

"Of all my business concerns that which most interests me now is the Congo development. I expect to give a great deal of attention to it. It is not at all unlikely that I shall make a visit there. The mines in which I am interested are just north of those known as King Solomon's Mines. The outlook for gold there is probably unsurpassed anywhere in the world.

"I am interested not only in the industrial development of the Congo—which country I am convinced affords the greatest opportunities now to be found in the world—but also in the moral and social conditions. The solution of the negro problem there is perhaps the one which deserves the greatest attention. The great exaggerations to which currency has been given have not in any way changed the firm purpose of those responsible for the future of that region to correct any abuses that heretofore have existed.

"It may be of interest to the public to know that I have now in the Congo exploring it in every part more men than Henry M. Stanley had upon his expedition in search of Dr. Livingston. These men are working under the direction of the very best men that America can produce in their various departments of activities."

An extensive sketch of Mr. Ryan appeared in THE INDIA RUBBER WORLD December 1, 1906 (page 72), in connection with the first public mention of his interest in rubber. Later we published a note on his retirement from active connection with most of his multifarious business interests.

News of the American Rubber Trade.

RUBBER WORK TO BE RESUMED AT OLNEYVILLE.

THE plant of the Joseph Banigan Rubber Co. at Olneyville (near Providence), Rhode Island—one of the subsidiary companies of the United States Rubber Co.—is being enlarged and otherwise put into readiness for the manufacture of tires and mechanical rubber goods. It is stated that about \$1,000,000 will be expended on the Olneyville plant, with a view to taking over there an important part of the production of the Revere Rubber Co., which a few months ago was amalgamated with the Rubber Goods Manufacturing Co., which in turn is controlled by the United States Rubber Co.

The Joseph Banigan Rubber Co. was incorporated in November, 1896, with \$1,000,000 capital, under the presidency of the late Joseph Banigan, and the manufacture of rubber footwear was begun January 11, 1897, the nucleus of the factory plant being the old Saxon woolen mill property at Olneyville. Following the death of Mr. Banigan, his executors sold the factory and business to the United States Rubber Co., in 1899. Three years later the capital of the Banigan company was increased to \$1,500,000.

Since March 10, 1908, the Banigan factory has not been operated, the management of the United States Rubber Co. deeming it in the interest of economy to combine the production of the Banigan company and the Woonsocket Rubber Co. in the factories of the latter. The plant at Olneyville, however, has been kept in a state of efficiency, with a view of its being put in operation whenever conditions of trade might render this desirable. President Colt is quoted as saying that when the Olneyville factory is again at work the four plants in Rhode Island controlled by the United States Rubber Co. will have a combined yearly output of \$25,000,000.

PICTURES OF THE RUBBER INDUSTRY.

THE B. F. Goodrich Co. (Akron, Ohio) are utilizing motion pictures to a wide extent in advertising their products. In connection with these pictures, which will be shown all over the country, is a lecture by Mr. F. M. Tillisch, from the company's office, entitled "From Tree to Tire." The picture films show successively forest views in the rubber districts above Pará, Brazil; the tapping of rubber trees, coagulation of the latex by smoking, and other details in the production of the rubber of commerce. These are followed by views in the interior of the Goodrich factory, illustrating all the processes of treating rubber, by washing, grinding, and the like; the building up of a tire, and, finally, mounting the tire on an automobile. This lecture has

been attended largely wherever it has been presented, and, together with the pictures, has been received with great interest.

RUBBER GOODS DIVIDEND.

THE directors of the Rubber Goods Manufacturing Co. on June 1 declared from net earnings the forty-fifth regular quarterly dividend of 1¾ per cent. on the preferred stock, payable on June 15.

MEMORIAL TO THE LATE R. D. EVANS.

At the annual banquet of the alumni of the school of medicine of Boston University, on June 1, the gift was announced of a fund of over \$200,000, for the establishment of a department of chemical research as a memorial to the late Robert D. Evans, some time president of the United States Rubber Co. The gift is from Mrs. Evans. By the way, the "Stetson cottage," owned by the late Mr. Evans, at Beverly, Massachusetts, is occupied this summer, as last, by the President of the United States.

RUBBER FACTORY EMPLOYEES CELEBRATE.

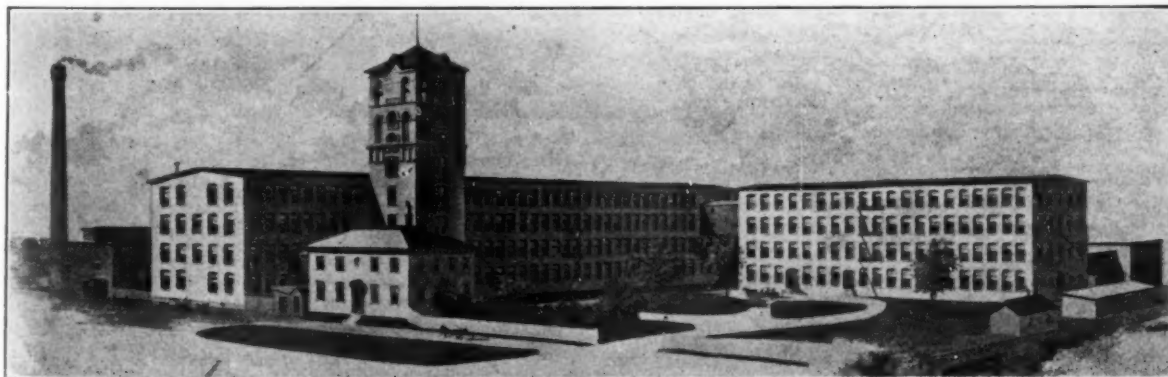
THE Converse Rubber Shoe Club gave a successful entertainment in connection with the opening of the new building of the Converse Rubber Shoe Co. (Malden, Massachusetts). The new building is two stories high, 150 x 70 feet, designed partially for manufacturing and partially for storage purposes. The club mentioned is composed of employés of the rubber company.

NEW YORK MERCHANTS' ASSOCIATION.

THE twelfth annual report of the Merchants' Association of New York shows a total membership of 1,294 corporations, firms and individuals. There are no debts, and the association has a comfortable cash balance. During the year attention was given to various questions of commercial and general interest, and the belief is entertained that much good has resulted from the activity of the association. The membership embraces 17 companies and firms more or less directly connected with the india-rubber interest, and a much larger number whose interests are less direct.

SOLID RUBBER TIRES IN EUROPE.

THE Colonial Tire and Rubber Co.—a corporation under the laws of Ohio to hold the foreign patents on the Swinehart side wire tire report that their licensee in Europe are all doing a good business. These tires are made on royalty in France by Etablissements J. B. Torrilhon at Clermont-Ferrand; in Germany by the Continental Caoutchouc- und Guttapercha-Compagnie, at Hanover; and in England by the Sirdar Rubber Co., Limited, of London. The management of the company for the

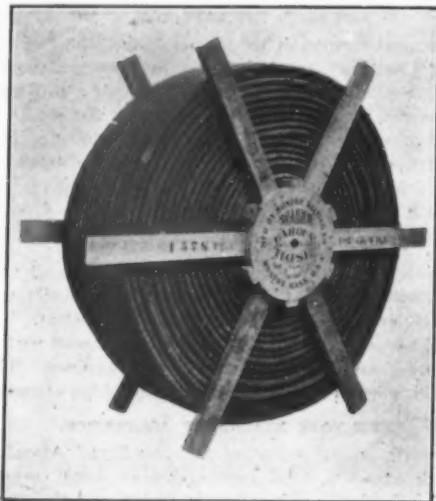


THE BANIGAN RUBBER FACTORY, AT OLNEYVILLE, RHODE ISLAND.

past nine years has been in the hands of Mr. P. D. Hall, its treasurer, at Akron, Ohio. The trade in these tires, known in France as "Bandes Américaines B. & S. Torrillon"—the initials relating to the patentees, Byrider and Swinehart—is reported to amount to about 80 per cent. of the business in solid rubber tires in that country.

A LARGE REEL OF HOSE.

THE illustration herewith was made from a photograph of a reel of hose 1,578 feet long, made by the Boston Belting Co., and which is believed to be one of the longest continuous lengths of hose yet manufactured. The product is $\frac{1}{2}$ inch, two ply,



Forsyth Roxbro braided hose, and this particular reel was sent to the manufacturers' agents in Pittsburgh, Messrs. J. & H. Phillips. The hose was vulcanized by direct steam, not in a mold or form.

RUBBER INDUSTRY AT CATASAUQUA.

THE O'Brien Rubber Thread and Webbing Co. (Catasauqua, Pennsylvania), have gone into voluntary bankruptcy, proceedings having been instituted in the United States District Court at Trenton, New Jersey, too late to be reported in the last issue of THE INDIA RUBBER WORLD. The company named was incorporated April 1, 1908, under the laws of New Jersey, with \$250,000 capital authorized. Among the incorporators named was William J. O'Brien, who became president, and Richard Barlow, who now figures as a principal creditor. The company acquired a plant at East Catasauqua, Pennsylvania, occupied formerly by the Catasauqua Rubber Co., incorporated in the District of Columbia, July 21, 1904, with an authorized capital of \$500,000, and of which the Rev. Father James Regnery, of Easton, Pennsylvania, was elected president. Later—on February 16, 1905—a charter was obtained by the Catasauqua Rubber Co. under the laws of Pennsylvania, with a stated capital of \$100,000. Financial difficulties ensued and in December, 1905, the assets of the Catasauqua company were offered at a sheriff's sale.

William J. O'Brien sailed from New York on June 1 for Russia for the purpose, as is reported, of entering into an engagement with an important rubber company there to take charge of the Catasauqua plant.

GIBNEY & BROTHERS' NEW YORK BRANCH.

THE opening of a New York branch of the Philadelphia tire house of James L. Gibney & Brother was mentioned in the June INDIA RUBBER WORLD (page 329). The location will be Nos. 248-252 West Fifty-fourth street, and the manager Mr. Walter A. Schott. The Gibney business was established in Philadelphia

in 1898, being confined to bicycle tire repairing on a small scale. The sale of bicycle tires was then taken on, and later automobile tires and tire accessories. The firm now are numbered among the largest tire dealing firms in the country.

CONCERNING RUBBER GOGGLE PATENTS.

HARVEY S. COVER, of South Bend, Indiana, issues a warning to dealers in rubber goggles for motorists, against infringing the patents granted to him for goggles. He states that decrees have been entered in favor of the patents in the United States circuit court in Indiana against G. H. Westing Co., and in the northern district of Illinois against Beckley-Ralston Co. and American Thermo-Ware Co. Mr. Cover's goggle has been described in THE INDIA RUBBER WORLD. Later a goggle by another firm was mentioned in this paper, and Mr. Cover writes that this "was the first intimation I (he) ever had of anybody besides myself (himself) that made or offered a rubber goggle of any kind."

RALEY RUBBER CO.'S PRODUCTS.

THE Raley Rubber Co., the incorporation of which was reported in the last issue of this paper, are manufacturing seamless nipples for nursing bottles. Charles Hofacker is president and Hiram S. Raley secretary-treasurer. The other directors are H. B. Raley and C. H. Hofacker. They are located at No. 440 Elm street, New Haven, Connecticut.

TRIBUTE TO THE LATE HENRY C. BURTON.

At a special meeting of the Executive Committee of the Rubber Sundries Manufacturers' Association, held on May 21, 1910, the following preamble and resolutions were adopted:

WHEREAS, It has pleased the Almighty to remove from our midst by death, May 10, 1910, Mr. HENRY CLAY BURTON, formerly president, and an active member of the Executive Committee since the organization of this Association; and,

WHEREAS, The success achieved by the Rubber Sundries Manufacturers' Association was largely due to his deep personal interest, conscientious, energetic and intellectual labor for the welfare of our Association, as presiding officer and as a member of the Executive Committee; and,

WHEREAS, His noble character and genial personality and his great belief in the benefits of co-operation has endeared him in the love and admiration of his fellow members of this Association; be it

Resolved, That the members of the Rubber Sundries Manufacturers' Association, through the death of Mr. HENRY CLAY BURTON has suffered a great loss; and, be it further

Resolved, That in commemoration of the love and esteem in which he was held by all members of this Association, and as evidence of their sorrow and their deep sympathy with the bereaved family, this preamble and resolutions be spread upon the minutes of this Association and a copy be forwarded to the family of our deceased associate and beloved friend.

G. R. HODGMAN, President;
ED. E. HUBER, Secretary-Treasurer;
H. E. RAYMOND.
F. H. JONES,
CHAS. J. DAVOL,
ALEXANDER M. PAUL,
Executive Committee.

TRADE NEWS NOTES.

NOTICES were posted at the Millville works of the Woonsocket Rubber Co. on June 2 of a shut down of two weeks for the purpose of installing a new fly wheel in the engine room.

The Mound City Duck and Rubber Co., of St. Louis, have removed from the premises so long occupied by them to larger quarters at No. 832 North Broadway, which they have leased for a long term.

The Diamond Rubber Co. of New York, have taken title to the property in Boston, Nos. 869-871 Boylston street, embracing 5,928 square feet of land, on which there are three story brick buildings. The property will be improved for the new occupants.

The Kokomo Rubber Co. (Kokomo, Indiana) issue an exceptionally attractive hanger illustrating their tires for motorcycles.

The B. F. Goodrich Co. (Akron, Ohio) issue a poster of unusual interest entitled "The Goodrich Rubber Man's Vacation," relating to the various forms of summer enjoyments in which rubber tired vehicles figure.

RUBBER CLUB OF AMERICA—MIDSUMMER OUTING.

The annual midsummer outing of the Rubber Club of America will take the form this year of a baseball carnival, arrangements for which have been completed by the executive committee. The date is Tuesday, July 19. The place is the beautiful Riverside Recreation grounds, at Weston, on the Charles river, near Boston, which have been secured for the exclusive use of the club and its guests for the day. Besides the "water baseball" and other aqueous sports, there will be regulation baseball, golf (at the Woodland Golf Club), tennis, swimming, and so on. The banquet will be served in the balcony dining room at 6.30 P. M. The famous Lynn Cadet band will be in attendance from first to finish. The entire cost will be \$5 per person. The secretary of the club, Mr. George H. Mayo, No. 197 Congress street, Boston, will be pleased to be informed, as early as possible, of what members will attend and the number of guests which each will invite. An aeroplane glider will be shown.

A NEW RUBBER RECLAIMING PLANT.

The plant of the Harmer Rubber Reclaiming Works (East Milestone, New Jersey), recently incorporated, as mentioned in THE INDIA RUBBER WORLD (May 1—page 291), has been practically completed. It is equipped with machinery of the latest design and best quality. The president, Mr. Thomas W. Harmer, has had many years of experience, both in the manufacture of mechanical rubber goods and in reclaiming rubber. Situated on the Delaware and Raritan canal and on the Pennsylvania railroad, the new company have shipping facilities such as can hardly be surpassed. A. Marcus is secretary and treasurer.

PENNSYLVANIA RUBBER CO.—INCREASE OF CAPITAL.

The capital of the Pennsylvania Rubber Co. (Jeannette, Pennsylvania) has been increased to \$2,000,000 by the issue of \$500,000 in additional preferred stock, subscribed for at par in cash by the former shareholders. The officers of the company today are:

President—HERBERT DUPUY.
Vice President—CHARLES M. DUPUY.
Secretary—GEORGE W. SHIPLEY.
Treasurer—H. WILFRED DUPUY.
General Manager—SENECA G. LEWIS.

Mr. Lewis is a recent acquisition to the company's staff, having been connected before with the sales department of the Winchester Repeating Arms Co., from which he resigned to assume his present duties. The factory manager is John J. Moriarty, some time with The B. F. Goodrich Co., and later with the Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited. The additional capital reported is to be utilized in the erection of additional buildings and the installation of new machinery.

INCREASE OF CAPITAL.

L. J. MUTTY Co., manufacturers of rubber carriage cloth in Boston, have increased their capital stock to \$250,000, fully paid. They were incorporated February 4, 1909, with \$120,000 capital authorized, succeeding to the business of a partnership under the same style. The present address of the business is Nos. 91-93 Federal street, Boston.

INCREASED FACTORY SPACE.

WEARWELL Rubber Co. (Marion, Indiana) advise THE INDIA RUBBER WORLD that they have lately trebled their space, and are now occupying three floors instead of one. They make inner sleeves and other accessories for rubber tires, cements, tire paste, and the like. They have also an extensive repair department. S. Hal Smith is the president of the company; G. R. Van Aucken, vice president and manager, and G. D. Lindsay secretary and treasurer.

ST. LOUIS CEMENT IN THE EAST.

The business of the St. Louis Rubber Cement Co. (St. Louis) has grown until it has become necessary to establish a distributing center of their product in the East. They have therefore concluded negotiations with C. A. Spencer & Son., No. 183 Essex street, Boston, for handling their cements and tape in New England and Canada, and also in the states of New York, New Jersey and Pennsylvania. Messrs. Spencer & Son are thoroughly equipped to handle this character of business, and anticipate carrying large stocks of cement in or near Boston; also in Philadelphia, Newark, N. J., and Rochester, N. Y.

TWO NEW INSULATING MATERIALS.

The Dickinson Manufacturing Co. (Springfield, Massachusetts) are manufacturing several new insulating materials under processes originated by Mr. Kurt R. Sternberg, general manager and treasurer of the company. One of these is known as "Sternoid," and another as "Stern-Bakelite," the binder of which consists of "Bakelite," the invention of Dr. L. H. Baekeland.

TIRE MEN IN THE AUTOMOBILE TRADE.

At the latest election of officers and directors of the New York Automobile Trade Association, there was a more equal distribution of officers among kindred lines affiliated. Of the twelve members of the board, four are car dealers, four represent big garage interests, and four represent the accessories trade. W. H. Yule, of The B. F. Goodrich Co. of New York, is the new treasurer of the association, and E. H. Broadwell, of The Fisk Rubber Co., is a director. A new committee has been formed devoted to aviation, and including Mr. Yule, of the Goodrich company.

TRADE NEWS NOTES

MR. ALFRED PASSLER, of Binghamton, New York, lately connected with the rubber trade as a traveling man, has gone to London as a special representative of the Kempshall Tyre Co. of Europe, Limited.

The Firestone Tire and Rubber Co. (Akron, Ohio), have taken a ten years' lease on property in San Francisco, at Fulton street and Van Ness avenue, on which they will erect a three-story and basement brick building 30 x 109 feet.

The Easton Rubber Manufacturing Co. is being organized at Easton, Pennsylvania, for the purpose of reclaiming rubber by a new process, and ultimately of manufacturing mechanical rubber goods in which the reclaimed material may be utilized. Wilmer Dunbar, of Greensburg, Pa., is mentioned as president and general manager.

The Southern Packing Manufacturing Co. has been organized in New Orleans, with \$25,000 capital, to make packings of rubber, asbestos, hemp, etc., for various purposes; also roofing and other building materials, and to act as manufacturers' agents for similar lines. The officers are C. T. Sondley, president; P. F. Strieman, vice-president and manager; and D. B. Rogan, secretary and treasurer. The location is No. 801 Baronne street.



THE RIVERSIDE RECREATION GROUNDS.

CHANGE AT THE GOODRICH BUFFALO BRANCH.

MR. H. B. NIBLETTE, for 12 years past connected with The B. F. Goodrich Co., and latterly with their New York branch, has been appointed manager of the Goodrich branch at Buffalo, New York, and has taken charge of his new position. The Buffalo branch, which has grown steadily since its establishment seven or eight years ago, is now among the most important of their selling establishments. Mr. W. O. Rutherford, whom Mr. Niblette succeeds at Buffalo, has returned to the factory, at Akron. The staff of the New York branch gave Mr. Niblette a dinner on the evening of June 23.

LIEUTENANT FRANCIS H. APPLETON.

ONE of the best known club men in Boston is Mr. Francis H. Appleton, who, with his son, owns a rubber reclaiming factory at Franklin, Massachusetts. In addition to prominent official positions that he holds in such clubs as The Rubber Club of Amer-



LIEUTENANT FRANCIS H. APPLETON.

ica, the Rubber Reclaimers' Club, the Point Shirley Club, and such societies as Boston Commandery, Knights Templar, the Governor of Massachusetts recently presented him with a document which makes him a lieutenant in that famous and abstemious body, The Ancient and Honorary Artillery of Boston.

NEW INCORPORATIONS.

DETROIT Airless Tire and Rubber Co., June 7, 1910, under the laws of Michigan; authorized capital, \$1,500,000. Incorporators: George C. Clark, George E. Stevenson, F. G. Van Dyke (trustee), Detroit, Michigan, and J. A. MacMillan, Dayton, Ohio. This company succeeds the Dayton Rubber Manufacturing Co., of Dayton, Ohio, incorporated May 17, 1905, following a reorganization of a business established at Dayton several years previous. Of late the company have taken an active interest in the "Airless" clincher tire, patented by J. A. MacMillan, who has been general manager. Mr. MacMillan will sustain the same relation to the new company. The Hooven interest will be represented in the Detroit enterprise. The Hoovens are connected with an important manufacture of steam engines, and have been represented on the board of the Dayton company from the beginning.

HUDSON Mechanical Rubber Co., June 15, 1910, under the laws of New Jersey; authorized capital, \$25,000. Incorporators: William A. Harding, No. 918 Lincoln place, Brooklyn, New York; J. Harrington Sickel and Welling S. Katzenbach, both of Trenton, New Jersey. The two gentlemen first named are respectively president and secretary-treasurer. The New Jersey address is No. 25 West State street, Trenton. They will have

an office and storeroom at No. 48 Dey street, New York, where they will sell mechanical rubber goods. Mr. Harding for some years has been the New York representative of the United and Globe Rubber Manufacturing Cos. Mr. Sickel is the son of Welling G. Sickel, former president of the United and Globe.

LEICESTER Rubber Co., June 17, 1910, under the laws of New Jersey; capital authorized, \$50,000. Incorporators: Anthony De Piano, William H. Maher, and George B. La Barre. To take over the manufacture of mechanical rubber and molded goods carried on for some years at No. 53 Paul avenue, Trenton, under the same name. [See THE INDIA RUBBER WORLD, March 1, 1908—page 197.]

PUNCTURE Proof Spring Tire Co., June 1, 1910, under the laws of Delaware; authorized capital, \$100,000. Incorporators: E. J. Forhan, G. F. Martin, and H. P. Jones, No. 154 Nassau street, New York city.

RUBBEROLINE Manufacturing Co., June 7, 1910, under the laws of New Jersey; authorized capital, \$125,000. Incorporators: Ferdinand C. von Heydebrand, No. 35 Washington place; Henry Mielck, No. 122 Palisade avenue; and John Karh, No. 32 Passaic street—all of Garfield, N. J. Mr. Karh has been elected president of the company. Further details appear in another column, and the office of the company is at his address as given.

FERROMATIC Tire Manufacturing Co., June 7, 1910, under the laws of Wisconsin; capital, \$11,500. Incorporators: Charles F. Wren, Stella Theresa Wren, and Conrad Werra. Location: Manitowoc, Wisconsin.

PERFECT Tire Co., June 8, 1910, under the laws of Ohio; capital, \$50,000. Incorporators: M. J. Kirby, W. A. Moyer, Frank L. Smith, and Jacob Boepple.

MICHELIN Tire Co., February 10, 1910, under the laws of Missouri, to cover the business in that state of Michelin Tire Co. (Milltown, New Jersey). Capital invested in Missouri: \$10,000. Incorporators: M. A. Wilson, E. M. Gough, J. O. Wilson, H. L. Dyer, and A. J. Goodbar.

CITY Auto and Rubber Co., April 28, 1910, under the laws of Tennessee. To engage in tire repairs. Location: Memphis, Tennessee.

AMHERST Manufacturing Co., May 25, 1910, under the laws of Massachusetts; authorized capital, \$45,000. Incorporators: Edwin D. Marsh, Mason A. Dickinson, and David Barry, all of Amherst, Massachusetts. E. D. Marsh is president and M. A. Dickinson treasurer and clerk. The company are referred to as intending to engage in manufacturing.

RIO Tambo Rubber Co., May 31, 1910, under the laws of Illinois; capital, \$60,000. Incorporators: John Henry, Marie Hahn, and Alexander Smietanka. Location: Room 901, No. 120 Randolph street, Chicago.

HORSESHOE Auto Tire Co., April 29, 1910, under the laws of New York; capital, \$25,000. Incorporators: Walter E. Holloway, No. 249 West 123d street, New York City, Henry D. Foster, Tompkinsville, Staten Island, and William Huber, No. 110 Worth street, New York City. This company has been formed to market in the eastern United States the special form of tire controlled by the Racine Auto Tire Co. (Racine, Wisconsin), recently incorporated. The special feature of this tire is a tread protected with renewable metal washers. The officers of the New York company are D. R. Van Vechten, president and general manager; H. D. Foster, vice-president; Walter E. Holloway, secretary and treasurer. The headquarters of the company for the present are in the Produce Exchange Annex, in the offices of Mr. Holloway, who is retiring from the crude rubber trade, to become connected with the new company.

L. Candee & Co. are among the larger manufacturing establishments of New Haven, Connecticut, with extensive sidewalk frontages who will be obliged shortly to pave new sidewalks to conform to the recent specifications adopted by the board of aldermen.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for five weeks, ending June 25:

COMMON STOCK, \$25,000,000.

[The treasury of a subsidiary company holds \$1,344,000.]

Last Dividend, April 30, 1900—1%.

Week May 28	Sales 1,800 shares	High 42½	Low 40¼
Week June 4	Sales 8,750 shares	High 41	Low 36
Week June 11	Sales 4,100 shares	High 39	Low 37
Week June 18	Sales 200 shares	High 38½	Low 38¾
Week June 25	Sales 5,340 shares	High 41¾	Low 40

For the year—High, 52½, Jan. 3; Low, 35, Feb. 7.
Last year—High, 57½; Low, 27.

FIRST PREFERRED STOCK, \$39,824,400.

Last Dividend, April 30, 1910—2%.

Week May 28	Sales 540 shares	High 112¼	Low 112
Week June 4	Sales 2,750 shares	High 112	Low 107
Week June 11	Sales 2,910 shares	High 110½	Low 107¾
Week June 18	Sales 2,000 shares	High 109½	Low 108¾
Week June 25	Sales 500 shares	High 110½	Low 110

For the year—High, 116½, Jan. 19; Low, 107, June 3.
Last year—High, 123½; Low, 98.

SECOND PREFERRED STOCK, \$9,965,000.

Last Dividend, April 30, 1910—1½%.

Week May 28	Sales shares	High —	Low —
Week June 4	Sales 300 shares	High 77	Low 76
Week June 11	Sales 300 shares	High 76	Low 75¼
Week June 18	Sales shares	High —	Low —
Week June 25	Sales 500 shares	High 77	Low 76

For the year—High, 84, Jan. 3; Low, 75¼, June 6.
Last year—High, 89½; Low, 67½.

SIX PER CENT. TRUST GOLD BONDS, \$19,500,000.

Week May 28	Sales 71 bonds	High 103	Low 102¾
Week June 4	Sales 18 bonds	High 102½	Low 102¾
Week June 11	Sales 34 bonds	High 102½	Low 102
Week June 18	Sales 34 bonds	High 102½	Low 102½
Week June 25	Sales 64 bonds	High 102½	Low 102¾

For the year—High, 104½, Jan. 15; Low, 102, June 11.
Last year—High, 106; Low, 102¾.

DETROIT'S \$1,500,000 SHOW.

THE Detroit Industrial Exposition, organized under the auspices of the Detroit Board of Commerce, opened on June 20 and is due to close on July 6. According to all reports the exposition is a most creditable representation of the industries and commerce of Detroit, and has been well supported by the public. The formal opening of the exposition was accompanied by the starting of all the machinery and the lighting of the building by means of an electric signal given by President Taft in Washington. The collection of exhibits in place, it is estimated, exceeds \$1,500,000 in value.

DERBY RUBBER CO.—INCREASED FACTORY CAPACITY.

THE Derby Rubber Co. are enlarging their rubber reclaiming plant at Shelton, Connecticut, having ordered mills sufficient to more than double their capacity, and they are installing an additional boiler plant. Among other improvements is the erection of a commodious office. The factory of late has been run 24 hours daily. Mr. J. W. Cary has been appointed factory manager and is now in charge. He has been several years in the employ of the Safety Insulated Wire and Cable Co. (Bayonne, New Jersey), and latterly as assistant superintendent.

BOSTON WOVEN ROSE CONVENTION.

FIFTEEN of the office managers and traveling representatives of the Boston Woven Hose and Rubber Co. assembled at Cambridge about the middle of June for the annual conference. The results obtained during the past year and conditions in every territory were fully considered, and plans made for the coming season.

STREAT'S NEW WATERPROOFING PATENT.

A PATENT relating to a waterproof fabric, issued to George Streat, of New York, is No. 959,178, dated May 24, 1910. The claims describe the yarns and their relation to each other, and

the filling of the interstices of the fabric with a waterproofing compound. Some 28 years ago Mr. Streat obtained his first patent for a waterproof fabric, which was the basis of considerable litigation with the mackintosh trade. [See THE INDIA RUBBER WORLD, February 1, 1909—page 167.]

TRADE NEWS NOTES.

THE International Rubber Co. (Barrington, Rhode Island), have begun operations in the old Annawamscutt mill, in West Barrington, in the manufacture of rubber sheeting, to which other products will be added.

Angie W. Pierce has resigned as superintendent of the druggists' sundries department of the National India Rubber Co. to become connected with the International Rubber Co. (Barrington, Rhode Island.) With the exception of one interval of a little more than a year Mr. Pierce has been continuously in the employ of the National company since September 6, 1865.

The directors of the Walpole Rubber Co. (Walpole, Massachusetts), have declared quarterly dividends of 1¼ per cent. on the preferred stock and 1 per cent. on the common stock, payable July 15 to holders of record on July 1.

The Ajax-Grieb Rubber Co. (Trenton, New Jersey), report that out of eight cars in the Atlanta-New York Good Roads Contest equipped with their tires, not one was obliged during the entire trip of 1,100 miles to put on a new casing.

The Bailey "Won't Slip" tread tire is now manufactured under license by nine American tire firms, the latest additions to the list being the Empire Tire Co. (Trenton, New Jersey) and the Consolidated Rubber Tire Co. (New York).

Mr. E. H. Sprague, president of the Omaha Rubber Co. Omaha (Nebraska), was lately elected president of the Omaha Automobile Club.

The factory of the Archer Rubber Co. (Milford, Massachusetts) has been very busy of late, and additional machinery is being installed with a view to increasing the capacity of the factory. They were reported lately to have in hand orders for proofing over 1,000,000 yards of cloth, in addition to the other lines of work that they are turning out.

PERSONAL MENTION.

A RECENT visitor to the United States was Senhor Waldemar Scholz, a leading exporter of rubber from Manáos, Brazil, and president of the Associação Commercial do Amazonas. Readers of THE INDIA RUBBER WORLD will remember that he was the president of the recent Congresso Commercial, Industrial e Agrícola held at Manáos, and which was attended by the Editor of this journal.

Colonel Samuel Pomeroy Colt, president of the United States Rubber Co., has issued invitations for a celebration of the one hundredth anniversary of the erection of the De Wolf Homestead, to be held at the Homestead, Linden place, Bristol, Rhode Island, on the afternoon of Monday, July 4. Colonel Colt, by the way, has caused to be published at denial of report that he will be a candidate to fill the next vacancy in the United States senate from Rhode Island.

Mr. James Bishop Ford, first vice president and treasurer of the United States Rubber Co., though an exceptionally busy man in connection with the corporation named and his private affairs, is often called upon to serve on the grand jury of New York county. He was selected to serve on a special grand jury sworn in on January 3 of this year, the deliberations of which were prolonged until early in June, when the foreman of the jury, Mr. John D. Rockefeller, Jr., appeared in court, presented a report, and asked that the jury be discharged. This motion was denied by the court, however, and the jury were ordered to continue their work. No other case of jury duty so long continued is on record in the county.

Mr. G. Edwin Alden, of Boston, is one of the directors of a very swell country club that has just been started in Wellesley, Massachusetts.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

IT is a question in the minds of many of the manufacturing and rubber supply men whether the real business conditions in San Francisco and on the Pacific coast are not considerably underrated. For the past three years the farmers all through this western territory have raised immense crops and have been getting good prices for their products. They have made money, and have, to a certain extent, improved their holdings materially. More than that, they have been living better than ever before, and just at present the farmers are buying more automobiles than the residents of the cities. But at the same time, although the farmers have for the past few years been making the money and spending some of it, the farmer is not a reckless spender. He puts away a good part of his money, and in that he is different from the wage earners of the cities, who, when they are making money spend it lavishly.

When money is spent in this fashion mechanical rubber goods' houses, as well as other merchants, begin to think that they are having splendid times, and so they most certainly are when there is speculation and booming going on in a big city. But the question is, whether the present conditions are not more healthy, and whether they will not bring results which are of more lasting benefit? The prosperity of the farmers comes to the city more slowly, but it is bound to come there, and if the farmers are well supplied with money, the city will enjoy the wave of prosperity for many years. This is the condition upon which the local merchants are placing their hopes. They are making some complaint, but right now they are forced to admit that they are doing a safe, substantial business, and their prospects for the future certainly were never on a more sound basis.

It is likely true that there are too many business houses here in proportion to the population. The census has shown a great increase in population in the country districts, but not so much in the cities as had generally been expected. Nearly all of the Pacific coast cities are built up to accommodate, by their numerous and large stores, a third again as many people as they have to wait upon. This is anticipation of the larger things that are to come, but in the meantime it looks as though some of the weaker ones must retire from the field. Eight or ten years ago the dealers did not have to pay so much rent, nor did they deem it necessary to keep up such elaborate stores, nor did they have the automobile for one of their competitors.

It is estimated that there will be 30,000 automobiles sold in California this year, and although it makes a big inroad upon some luxuries, it has some certain drawbacks to the rubber business, saving, of course, the tire departments. And when the merchants compare their present business with some that they enjoyed during the years of less expense and less competition, they are apt to say that trade is quiet now, although when they take the present business for what it is, all the live houses find that they are doing well.

THE many friends, both west and east, of Henry C. Norton, manager of the American Rubber Manufacturing Co., are very grateful to learn that he has passed the danger point of his very serious attack of typhoid fever, and is now fairly on the road to recovery.

A CHANGE has been effected with the Phoenix Rubber Co., of San Francisco. Mr. Austin Kanzee, one of the founders of this firm, has purchased the interest of J. D. Ralph and C. P. Overton. Mr. Fred W. Burgers, a prominent member of the Olympic Club and a well-known athlete, has become associated with Mr. Kanzee as a member of the Phoenix Rubber Co., and this company, as reorganized, intends to specialize on tires. To that end they will handle the "Republic" tires—pneumatic and solid. Mr. Kanzee will move his seat of operations to the district most suit-

able to the automobile trade, and will secure a new store in a fireproof building. The mechanical end of the business has been disposed of to the Crandley Rubber and Supply Co., who will handle the Republic Rubber Co.'s mechanical lines.

MR. W. J. GORHAM has been in Los Angeles supervising the fitting up of the new branch store which the Gorham Rubber Co. are preparing to move into in that city. They will be located in the new store by the first of August. In Portland, Oregon, the firm's branch is also moving into a new store, at No. 308 Oak street. The promised raise in the price of tires on July 1 has created such a demand that the shelves of this firm, as well as all the others, have been practically cleaned of tires, and if they had more stock they could do all kinds of business. Mr. Gorham will come to San Francisco for a week or two in a few days, and then will take his family back with him to Los Angeles to stay a few months.

MR. L. L. TORREY, formerly manager on this coast for the Pennsylvania Rubber Co., has returned from his eastern trip, where he secured the Coast agency for the Quaker City Rubber Co., of Philadelphia.

The Pennsylvania Rubber Co. have placed their tires with the Regal Automobile Co. of San Francisco, leaving the coast branch of the firm under the supervision of Mr. French, with the company's remaining lines to specialize on.

Mr. Joseph V. Selby has returned from his trip to the east, where he visited the headquarters of the Boston Woven Hose and Rubber Co.

Mr. C. C. Eichelberger, manager of the Pacific coast branch of the Firestone Tire and Rubber Co., states that his firm has closed a long lease for the premises on the northeast corner of Van Ness avenue and Fulton street. A three-story structure of the Mission type will be built for the firm.

ADDITIONAL TRADE NOTES.

TRENTON is arranging to have a "sane" celebration of the Fourth this year, to be in charge of a general committee headed by Mr. Welling G. Sickel, a former mayor of the city and an important member of the rubber trade.

The Mexican Crude Rubber Co., engaged in the guayule rubber business in Mexico and having headquarters at Detroit, Michigan, have announced an initial quarterly dividend of 3 per cent., for the quarter ending June 30, and payable July 15.

Mr. Hoskison Gates, of Riverbank court, Cambridge, Massachusetts, has accepted a position as salesman with the Picher Lead Co. Mr. Gates will cover the Eastern seaboard territory, with headquarters at the office of the company, No. 100 William street, New York.

The Le Fort Rubber Cement Co. have begun the manufacture of rubber cement for the shoe trade at Brockton, Massachusetts. The location is at Mason and Standish streets.

The Canadian Consolidated Rubber Co., Limited, announce that the regular quarterly dividend of 1¾ per cent. on preferred shares will be payable on July 2.

EASTHAMPTON RUBBER THREAD CO.

At the annual meeting of this company (Easthampton, Massachusetts, June 21) these officers were re-elected: William G. Bassett, president; L. S. Stowe, treasurer; F. W. Pitcher, clerk and general manager; W. L. Pitcher, superintendent.

AVIATION FOR RUBBER MEN.

A FEATURE of interest novel on the program of the outings of the Rubber Club of America has been arranged for the annual event of this Club, which, as announced on another page, is to take place this month. It is an exhibition of an aeroplane glider by an expert.

Review of the Crude Rubber Market.

THE Amazon output of rubber during the crop year, which ends with this date, was larger than in any preceding year, but the amount of the increase was not sufficient to have a marked influence on price conditions. It may be of interest to analyze the year's arrivals (including caucho) as compared with three preceding years, as follows:

	1906-07.	1907-08.	1908-09.	1909-10.
July-December tons	14,720	14,240	15,735	16,715
January	3,780	4,860	5,480	5,490
February	5,060	5,340	5,040	4,760
March	5,830	4,240	4,140	5,210
April	4,490	3,100	3,760	3,600
May	2,625	3,210	2,340	2,175
June	1,500	1,660	1,570	1,070

Total, crop, year ... 38,005 36,650 38,065 39,020
[a To and including June 29, 1910.]

It will be seen from the table that the only gain over last year was recorded in the first six months of the season, when the arrivals were practically 1,000 tons in excess of the corresponding arrivals one year before. Since January 1, in spite of the exceptional prices prevailing in the consuming market, the receipts have been smaller than in the second half of any recent season. The January-June arrivals for four years have been as follows (in tons):

	1907.	1908.	1909.	1910.
January-June	23,285	22,410	22,330	22,305

The record of the month has been full of fluctuations, but within a narrow range. At the London auction of June 14, the offerings of plantation sorts were larger than on any previous occasion—amounting to 255 tons—and the sale continued through three days. The bidding was slow at first, but became more active, and prices advanced somewhat as the sale progressed. The results of the sale had a firming effect on the market, as had also the Antwerp auction on June 23.

At the latter about 279 tons were offered whereof about 75 per cent. is understood to have been sold at an average advance of about 95 centimes per kilogram [=about 8½ cents per pound]. The offerings embraced an unusual quantity of plantation sorts.

NEW YORK QUOTATIONS.

Following are quotations at New York for Pará grades, one year ago, one month ago, and June 30—the current date:

PARA.	July 1, '09.	June 1, '10.	June 30, '10.
Islands, fine, new.....	140@141	225@226	225@226
Islands, fine, old.....	143@144	none here	227@228
Upriver, fine, new.....	147@148	240@241	238@239
Upriver, fine, old.....	149@150	242@243	240@241
Islands, coarse, new.....	68@ 69	95@ 96	104@105
Islands, coarse, old.....	71@ 72	none here	none here
Upriver, coarse, new....	104@105	160@161	159@160
Upriver, coarse, old....	none here	none here	160@161
Cametá	80@ 81	109@110	120@121
Caucho (Peruvian), ball.	94@ 95	155@156	153@154
Caucho (Peruvian), slab.	80@ 81	none here	none here
Ceylon, fine, sheet.....	155@156	229@230	218@219

AFRICAN.

Lopori, ball, prime.....	110@111	none here	none here
Lopori, strip, prime.....	none here	none here	197@198
Aruwimi	—@100	none here	none here
Upper Congo, ball, red...	104@105	190@191	none here
Ikelemba	none here	none here	none here
Sierra Leone, 1st quality.	106@107	165@168	167@168
Massai, red	106@107	165@168	167@168
Soudan niggers	101@102	none here	none here
Cameroon, ball	74@ 75	110@111	none here
Benguela	67@ 68	none here	none here
Madagascar, pinky	98@ 99	none here	none here
Accra flake	22@ 23	none here	none here

CENTRALS.

Esmeralda, sausage	90@ 91	133@134	131@132
Guayaquil, strip	77@ 78	106@107	none here

Nicaragua, scrap	87@ 88	128@129	126@127
Panama	67@ 68	none here	90@ 91
Mexican, scrap	89@ 90	128@129	126@127
Mexican, slab	65@ 66	none here	none here
Mangabeira, sheet	61@ 62	none here	none here
Guayule	34@ 35	95@100	94@ 95

EAST INDIAN.

Assam	95@ 96	none here	133@135
Pontianak	434@ —	8½@ 9	7½@ 8
Borneo	35@ 45	none here	none here

Late Pará cables quote:

	Per Kilo.	Upriver, fine	Per Kilo.
Islands, fine	\$8600	.....	11\$8000
Islands, coarse	\$8000	Upriver, coarse	6\$800
		Exchange	16½d.

Latest Manáos advices:

Upriver, fine	12\$500	Exchange	16 13/16d.
Upriver, coarse	7\$000		

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.		Total	Total	Total
	Fine and Medium.	Coarse.	1910.	1909.	1908.
Stocks, April 30.....tons	127	16 =	143	543	357
Arrivals, May	212	120 =	332	1062	1506
Aggregating	339	136 =	475	1605	1863
Deliveries, May	248	121 =	369	1421	1493
Stocks, May 31.....	91	15 =	106	184	370

	PARA.			ENGLAND.		
	1910.	1909.	1908.	1910.	1909.	1908.
Stocks, April 30.....tons	260	935	1040	1100	720	2005
Arrivals, May	1340	1370	1955	1308	830	700
Aggregating	1600	2305	2095	2408	1550	2705
Deliveries, May	925	1750	2360	858	950	1110

Stocks, May 31	675	555	635	1550	600	1595
				1910.	1909.	1908.
World's visible supply, May 31.....tons				2,871	2,367	3,469
Pará receipts, July 1 to May 31.....				30,570	29,040	28,420
Pará receipts of caucho, same dates.....				7,380	7,540	6,370
Afloat from Pará to United States, May 31				60	481	750
Afloat from Pará to Europe, May 31.....				480	542	424

African Rubbers.

NEW YORK STOCKS (IN TONS).

May 1, 1909.....	268	December 1, 1909.....	134
June 1	156	January 1, 1910	228
July 1	268	February 1	134
August 1	130	March 1	161
September 1	123	April 1	121
October 1	67	May 1	125
November 1	134	June 1	90

Liverpool.

WILLIAM WRIGHT & Co. report [June 1]:

Fine Pará.—With an absence of trade demand, both here and in the States, prices have declined fully 1s. 6d. (= 35.6 cents) per pound since our last; stocks in America are small, and although large here are well held. Until there is a resumption of trade demand, prices will be subject to speculative manipulation. The Manáos receivers have taken 900 to 1,000 tons off the market, and so far this has had no appreciable effect.

Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for carload lots, per pound—show practically no change from last month:

Old rubber boots and shoes—domestic.....	10¾@10½
Old rubber boots and shoes—foreign.....	10½@10¼
Pneumatic bicycle tires	7¼@ 7¾
Automobile tires	10½@10½
Solid rubber wagon and carriage tires.....	10¼@10¾
White trimmed rubber.....	10 @11
Heavy black rubber	6½@ 6¾
Air brake hose.....	6 @ 6¼
Garden hose	2¾@ 3
Fire and large hose	3¾@ 3½
Matting	1¾@ 1½

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weight in Pounds.]

JUNE 3.—By the steamer *Cuthbert*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Cauch.	Total.
New York Commercial Co.	40,200	16,400	23,500	6,000	86,100
Henderson & Korn.	.....	.....	.....	41,400	41,400
Poel & Arnold.	1,100	.....	32,300	.....	33,400
L. Johnson & Co.	300	.....	25,100	.....	25,400
G. Amsinck & Co.	4,400	900	3,400	6,900	15,600
A. T. Morse & Co.	.....	.....	16,500	.....	16,500
Edmund Reeks & Co.	.....	.....	300	10,900	11,200
William E. Peck & Co.	2,200	300	3,300	.....	5,800
Total	48,200	17,600	104,400	65,300	235,400

JUNE 14.—By the steamer *Dominic*, from Pará:

Poel & Arnold.	32,100	.....	48,200	10,600	90,900
New York Commercial Co.	27,500	7,500	15,200	1,300	51,500
Henderson & Korn.	24,700	700	2,600	.....	28,000
A. T. Morse & Co.	.....	.....	21,800	.....	21,800
L. Johnson & Co.	700	.....	13,900	.....	14,600
Hagemeyer & Brunn.	4,500	900	1,800	1,800	9,000

Edmund Reeks & Co.	3,200	300	1,300	.....	4,800
William E. Peck & Co.	700	.....	600	.....	1,300
Total	93,400	9,400	105,400	13,700	221,900

JUNE 21.—By the steamer *Sao Paulo*, from Pará:

A. T. Morse & Co.	13,200	.....	4,600	.....	17,800
L. Johnson & Co.	.....	.....	25,100	.....	25,100
Poel & Arnold.	.....	.....	25,100	.....	25,100
New York Commercial Co.	.....	.....	3,300	.....	3,300
William E. Peck & Co.	1,100	.....	700	.....	1,800
Total	14,300	.....	58,800	.....	73,100

JUNE 23.—By the steamer *Clement*, from Pará:

Poel & Arnold.	16,400	5,700	62,700	.....	84,800
Hagemeyer & Brunn.	21,100	2,500	9,900	.....	33,500
L. Johnson & Co.	.....	.....	17,300	.....	17,300
A. T. Morse & Co.	12,900	.....	2,600	1,300	16,800
New York Commercial Co.	.....	.....	5,900	4,300	10,200
Henderson & Korn.	8,200	.....	.....	.....	8,200
William E. Peck & Co.	3,300	300	3,300	.....	6,900
Total	61,900	8,500	101,700	5,600	177,700

PARA RUBBER VIA EUROPE.

MAY 31.—By the *Arabic*=Liverpool:
New York Commercial Co. (Fine)..... 35,000JUNE 1.—By the *Coppaname*=Bolívar:
General Export Co. (Fine)..... 3,500JUNE 8.—By the *Caronia*=Liverpool:
Raw Products Co. (Coarse)..... 10,000
Livsey & Co. (Coarse)..... 7,000 17,000JUNE 10.—By the *Pennsylvania*=Hamburg:
George A. Alden & Co. (Coarse)..... 10,000JUNE 14.—By the *Surinam*=Bolívar:
General Export Co. (Fine)..... 45,000
General Export Co. (Coarse)..... 11,000
American Trading Co. (Fine)..... 13,000
American Trading Co. (Coarse)..... 36,000
Iglesias Lobo & Co. (Fine)..... 15,000
Iglesias Lobo & Co. (Coarse)..... 9,000
G. Amsinck & Co. (Fine)..... 5,500
G. Amsinck & Co. (Coarse)..... 2,000 136,500JUNE 17.—By the *Mauritania*=Liverpool:
N. Y. Commercial Co. (Fine)..... 22,500
N. Y. Commercial Co. (Cauch)..... 22,500 45,000

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

MAY 27.—By the *Pres. Lincoln*=Hamburg:
George A. Alden & Co..... 7,000
Poel & Arnold..... 3,000 10,000MAY 28.—By the *Mexico*=Trontera:
Harburger & Stack..... 17,500
General Export Co..... 4,500
E. Steiger & Co..... 4,000
H. Marquardt & Co..... 3,500
W. L. Wadleigh..... 3,500
Streebe & Ultze..... 3,500
Graham, Hinkley & Co..... 2,500
J. W. Wilson & Co..... 2,000
American Trading Co..... 1,500
Isaac Kubic Co..... 1,000 43,500MAY 31.—By the *Monterey*=Tampico:
Continental-Mexican Rubber Co.*150,000
Ed. Maurer.....*90,000
N. Y. Commercial Rubber Co.*67,000 *307,000MAY 31.—By the *Altai*=Colombia:
Maitland, Coppell & Co..... 2,500
Suzarte & Whitney..... 2,500
Kunhardt & Co..... 2,500 7,500MAY 31.—By the *Finland*=Antwerp:
Poel & Arnold..... *11,000MAY 31.—By the *Alliance*=Colon:
G. Amsinck & Co..... 16,000
Pablo Calvet & Co..... 5,500
Mecke & Co..... 3,500
A. Santos & Co..... 3,000
A. T. Morse & Co..... 2,500
Isaac Brandon & Bros..... 2,000 35,500MAY 31.—By the *El Norte*=Galveston:
C. T. Wilson & Co..... *15,000MAY 31.—By the *Comus*=New Orleans:
A. T. Morse & Co..... 5,000
Robinson & Co..... 4,000
A. N. Rotholz..... 3,500Manhattan Rubber Co..... 2,500
Neuss Hesslein & Co..... 1,500
Eggers & Heinlein..... 1,500 18,000JUNE 1.—By the *El Alba*=Galveston:
Continental-Mexican Rubber Co..... *300,000JUNE 2.—By the *Jose*=Honduras:
Eggers & Heinlein..... 7,000
A. Rosenthal & Son..... 5,000
Manhattan Rubber Co..... 2,000 14,000JUNE 2.—By the *El Paso*=Galveston:
C. T. Wilson & Co..... *22,500JUNE 4.—By the *Morro Castle*=Frontera:
Harburger & Stack..... 7,500
E. N. Tibbals & Co..... 5,500
New York Commercial Co..... 3,500
H. Marquardt & Co..... 1,500
General Export Co..... 1,500
J. W. Wilson & Co..... 1,500
Maldonado & Co..... 1,000
E. Steiger & Co..... 1,000 23,000JUNE 6.—By the *Voltaire*=Bahia:
Poel & Arnold..... 65,000
A. Hirsch & Co..... 27,000
J. H. Rossbach & Bros..... 13,500
A. D. Hetch & Co..... 5,500 101,000JUNE 6.—By the *Matanzas*=Tampico:
Continental-Mexican Rubber Co.*160,000
Ed. Maurer.....*45,000
Poel & Arnold.....*35,000
New York Commercial Co.*33,000 *273,000JUNE 6.—By the *Colon*=Colon:
G. Amsinck & Co..... 9,500
Isaac Brandon & Bros..... 8,000
Piza, Nephews & Co..... 3,500
National Sewing Machine Co..... 1,700
Pablo Calvet & Co..... 1,700
R. Fabien & Co..... 1,500
New York Commercial Co..... 1,500
L. Johnson & Co..... 1,000
Demarest Bros. & Co..... 1,000
Mecke & Co..... 1,000 30,400JUNE 6.—By the *Crown Prince*=Bahia:
J. H. Rossbach & Bros..... 80,000
Poel & Arnold..... 34,000
New York Commercial Co..... 22,000 136,000JUNE 7.—By the *Vaderland*=Antwerp:
Poel & Arnold..... *11,000JUNE 7.—By the *Prins Eitel Friedrich*=Colombia:
J. H. Rossbach & Bros..... 7,500
Maitland, Coppell & Co..... 3,500
Caballero & Blanco..... 3,000 14,000JUNE 7.—By the *El Dia*=Galveston:
Continental-Mexican Rubber Co..... *75,000JUNE 8.—By the *Trent*=Colombia:
A. M. Capen's Sons..... 9,000
Suzarte & Whitney..... 1,500
G. Amsinck & Co..... 1,500 12,000JUNE 9.—By the *Momus*=New Orleans:
A. T. Morse & Co..... 2,500
Manhattan Rubber Co..... 2,000
Robinson & Co..... 1,000
New York Commercial Co..... 1,000 6,500JUNE 10.—By the *Pennsylvania*=Hamburg:
Rubber Trading Co..... 9,000JUNE 10.—By the *El Cid*=Galveston:
C. T. Wilson & Co..... *37,000JUNE 13.—By the *Celtic*=Liverpool:
A. Hirsch & Co..... 13,500JUNE 13.—By the *Merida*=Mexico:
Harburger & Stack..... 15,000
E. N. Tibbals..... 7,000
General Export Co..... 3,500
H. Marquardt & Co..... 3,500 29,000JUNE 13.—By the *Lopland*=Antwerp:
Poel & Arnold..... *10,000JUNE 13.—By the *Alleghany*=Colombia:
Stanley Jordan & Co..... 2,500
J. H. Rossbach & Bros..... 1,000
Kunhardt & Co..... 1,000
Delima, Cortissoz & Co..... 1,000 5,500JUNE 13.—By the *Seguranca*=Tampico:
New York Commercial Co.*135,000
Ed. Maurer.....*125,000
Poel & Arnold.....*15,500
General Export Co.....*2,500
For Europe.....*50,000 *328,000JUNE 4.—By the *Prinz Joachim*=Colon:
G. Amsinck & Co..... 3,500
Graham, Hinkley & Co..... 1,500
J. A. Pauli & Co..... 1,500 6,500JUNE 13.—By the *Advance*=Colon:
G. Amsinck & Co..... 6,500
Isaac Brandon & Bros..... 3,500
L. Johnson & Co..... 2,000
American Trading Co..... 1,000
Eggers & Heinlein..... 1,000
Demarest Bros. & Co..... 1,000
New York Commercial Co..... 1,000
Bartling & De Leon..... 1,000 17,000JUNE 16.—By the *Comus*=New Orleans:
A. T. Morse & Co..... 6,000
Manhattan Rubber Co..... 5,000
Robinson & Co..... 1,500
New York Commercial Co..... 1,500
Eggers & Heinlein..... 2,000 16,000JUNE 17.—By the *El Norte*=Galveston:
Continental-Mexican Rubber Co..... *155,000JUNE 17.—By the *America*=Mexico:
Geo. A. Alden & Co..... 3,500JUNE 18.—By the *Byron*=Bahia:
A. Hirsch & Co..... 65,000
J. H. Rossbach & Bros..... 5,600
Poel & Arnold..... 50,000
A. D. Hatch & Co..... 15,000 186,000JUNE 18.—By the *Esperanza*=Vera Cruz:
H. Marquardt & Co..... 3,000
J. A. Kendall Co..... 1,500
American Trading Co..... 1,500
A. Klipstein & Co..... 1,000 7,000JUNE 18.—By the *Panama*=Colon:
Piza, Nephews & Co..... 5,000
A. Rosenthal & Son..... 2,500
Henry Mann & Co..... 1,000 14,500JUNE 20.—By the *Prinz Sigismund*=Colombia:
Cortez Commercial Co..... 3,500
Caballero & Blanco..... 1,500
Maitland, Coppell & Co..... 1,500
Isaac Brandon & Bros..... 1,000 7,500JUNE 21.—By the *Bayamo*=Tampico:
Continental-Mexican Rubber Co.*300,000
Ed. Maurer.....*70,000
New York Commercial Co.....*67,000
Poel & Arnold.....*40,000
For Europe.....*25,000 *502,000

RUBBER FLUX

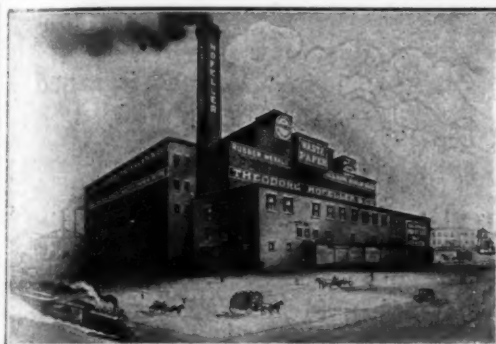
No. 17. Particularly adapted to softening material for tubing machine. Almost universally used for waterproofing wire.

No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it DOES NOT BLOW UNDER CURE.

WRITE FOR PRICES.

Massachusetts Chemical Co., Walpole, Mass.

SOLE FACTORIES:
WALPOLE RUBBER WORKS
WALPOLE VARNISH WORKS
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(I invite inquiries from Manufacturers respecting the various grades of rubber I market)

JUNE 21.—By the <i>Lao Paulo</i> =Bahia:	
A. Hirsch & Co.....	9,000
JUNE 22.—By the <i>El Alba</i> =Galveston:	
E. S. Churchill.....	*20,000
JUNE 23.—By the <i>Kroonland</i> =Antwerp:	
Poel & Arnold.....	*11,500

AFRICAN.

MAY 26.—By the <i>Adriatic</i> =London:	
Poel & Arnold.....	6,000
MAY 27.—By the <i>Kroonland</i> =Antwerp:	
W. H. Stiles.....	11,000
MAY 28.—By the <i>President Lincoln</i> =Hamburg:	
A. T. Morse & Co.....	13,000
Rubber Trading Co.....	3,500
W. L. Gough Co.....	2,500
MAY 31.—By the <i>Arabic</i> =Liverpool:	
George A. Alden & Co.....	100,000
Robinson & Co.....	4,500
Rubber Import Co.....	2,500
Raw Products Co.....	2,000
MAY 31.—By the <i>Amerika</i> =Hamburg:	
George A. Alden & Co.....	40,000
JUNE 3.—By the <i>Lusitania</i> =Liverpool:	
H. A. Gould Co.....	11,000
Raw Products Co.....	5,000
JUNE 6.—By the <i>St. Louis</i> =London:	
George A. Alden & Co.....	25,000
Livesey & Co.....	2,500
JUNE 6.—By the <i>Cincinnati</i> =Hamburg:	
Poel & Arnold.....	34,000
George A. Alden & Co.....	11,500
W. L. Gough Co.....	11,500
A. T. Morse & Co.....	4,500
Robert Badenhop.....	3,300
JUNE 7.—By the <i>Vaderland</i> =Antwerp:	
Robinson & Co.....	18,000
Livesey & Co.....	3,500
JUNE 10.—By the <i>Pennsylvania</i> =Hamburg:	
Poel & Arnold.....	45,000
Muller, Schall & Co.....	5,500
JUNE 13.—By the <i>Celtic</i> =Liverpool:	
George A. Alden & Co.....	22,500
JUNE 13.—By the <i>New York</i> =London:	
General Rubber Co.....	13,500
George A. Alden & Co.....	6,500
JUNE 13.—By the <i>Cleveland</i> =Hamburg:	
George A. Alden & Co.....	13,500
JUNE 13.—By the <i>Lapland</i> =Antwerp:	
A. T. Morse & Co.....	85,000
Rubber Trading Co.....	27,000
H. A. Gould Co.....	15,000
W. H. Stiles.....	13,500
Livesey & Co.....	7,000
W. L. Gough Co.....	7,000
JUNE 17.—By the <i>Caroline</i> =Havre:	
A. T. Morse & Co.....	13,500
Rubber Trading Co.....	7,000
JUNE 17.—By the <i>Graf Waldersee</i> =Hamburg:	
A. T. Morse & Co.....	35,000
George A. Alden & Co.....	17,000
JUNE 20.—By the <i>Cedric</i> =Liverpool:	
George A. Alden & Co.....	22,500
C. P. dos Santos.....	7,000

JUNE 20.—By the <i>Chicago</i> =Havre:	
A. T. Morse & Co.....	13,500
JUNE 23.—By the <i>Blucher</i> =Hamburg:	
George A. Alden & Co.....	20,000
Poel & Arnold.....	10,000
W. L. Gough Co.....	4,500

EAST INDIAN.

[*Denotes plantation rubber.]

MAY 26.—By the <i>Adriatic</i> =London:	
Poel & Arnold.....	90,000
New York Commercial Co.....	*18,000
MAY 27.—By the <i>President Lincoln</i> =Hamburg:	
George A. Alden & Co.....	9,000
Livesey & Co.....	4,500
MAY 31.—By the <i>Philadelphia</i> =London:	
Poel & Arnold.....	*35,000
New York Commercial Co.....	*7,000
JUNE 2.—By the <i>Drumcree</i> =Colombo:	
New York Commercial Co.....	*11,500
A. T. Morse & Co.....	*11,500
JUNE 2.—By the <i>Teutonic</i> =London:	
Poel & Arnold.....	*25,000
JUNE 2.—By the <i>Sikh</i> =Singapore:	
W. L. Gough Co.....	22,500
Malaysian Rubber Co.....	17,000
Otto Isenstein & Co.....	5,500
Ed Maurer.....	3,500
W. R. Russell & Co.....	5,500
JUNE 3.—By the <i>Moltkefels</i> =Colombo:	
A. T. Morse & Co.....	*40,000
New York Commercial Co.....	*22,500
JUNE 6.—By the <i>St. Louis</i> =London:	
New York Commercial Co.....	*7,000
A. T. Morse & Co.....	*2,500
JUNE 6.—By the <i>Indravelli</i> =Singapore:	
Heabler & Co.....	25,000
Robinson & Co.....	*5,000
JUNE 8.—By the <i>Oceanic</i> =London:	
New York Commercial Co.....	*33,000
Poel & Arnold.....	*15,000
Poel & Arnold.....	5,000
JUNE 13.—By the <i>Cleveland</i> =Hamburg:	
Livesey & Co.....	10,000
JUNE 13.—By the <i>New York</i> =London:	
New York Commercial Co.....	*25,000
Poel & Arnold.....	*25,000
JUNE 13.—By the <i>Minneapolis</i> =London:	
Ed Maurer.....	*17,000
JUNE 16.—By the <i>Majestic</i> =London:	
Poel & Arnold.....	*25,000
New York Commercial Co.....	*11,500
JUNE 18.—By the <i>Dochra</i> =Singapore:	
W. L. Gough Co.....	33,000
George A. Alden & Co.....	30,000
Poel & Arnold.....	30,000
Heabler & Co.....	15,000
Malaysian Rubber Co.....	15,000
JUNE 18.—By the <i>Karema</i> =Colombo:	
New York Commercial Co.....	*45,000
A. T. Morse & Co.....	*22,500
JUNE 20.—By the <i>St. Paul</i> =London:	
Poel & Arnold.....	*25,000
W. L. Gough Co.....	*7,000

JUNE 21.—By the <i>Minnetonka</i> =London:	
Raw Products Co.....	*13,500
General Rubber Co.....	6,500
George A. Alden & Co.....	2,500
JUNE 23.—By the <i>Adriatic</i> =London:	
Poel & Arnold.....	*15,000
New York Commercial Co.....	*13,500

GUTTA-JELUTONG.

JUNE 2.—By the <i>Sikh</i> =Singapore:	
Heabler & Co.....	750,000
W. L. Gough Co.....	350,000
George A. Alden & Co.....	500,000
Poel & Arnold.....	325,000
L. Littlejohn & Co.....	350,000
JUNE 6.—By the <i>Indravelli</i> =Singapore:	
Heabler & Co.....	650,000
W. L. Gough & Co.....	625,000
George A. Alden & Co.....	400,000
L. Littlejohn & Co.....	325,000
Poel & Arnold.....	250,000
Winter & Smilie.....	11,200
JUNE 18.—By the <i>Dochra</i> =Singapore:	
Heabler & Co.....	550,000
W. L. Gough Co.....	250,000
Poel & Arnold.....	250,000
George A. Alden & Co.....	225,000
L. Littlejohn & Co.....	200,000

GUTTA-PERCHA.

BALATA.

JUNE 2.—By the <i>Guiana</i> =Demerara:	
Suzarte & Whitney.....	2,500
JUNE 6.—By the <i>Saramaca</i> =Trinidad:	
Ed Maurer.....	2,000
Frame & Co.....	1,500
JUNE 13.—By the <i>Cleveland</i> =Hamburg:	
Schulz & Ruckgaber.....	7,000
JUNE 14.—By the <i>Suriname</i> =Demerara:	
Ed Maurer.....	3,500
JUNE 21.—By the <i>Marowijne</i> =Trinidad:	
Ed Maurer.....	9,000
Middleton & Co.....	2,500
J. A. Pauli & Co.....	1,500
JUNE 22.—By the <i>Korona</i> =Demerara:	
Ed Maurer.....	3,500
George A. Alden & Co.....	3,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—MAY.

Imports.	Pounds.	Value.
India-rubber.....	4,965,349	\$4,908,595
Balata.....	15,084	9,403
Gutta-percha.....	39,252	5,200
Gutta-jelutong (Pontianak).....	5,235,690	290,647
Total.....	10,255,375	\$5,213,845
Exports.		
India-rubber.....	463,779	\$746,794
Balata.....	3,959	4,100
Gutta-percha.....	.....	.....
Reclaimed rubber.....	62,335	7,294
Rubber scrap, imported....	2,167,434	\$174,745
Rubber scrap, exported....	374,600	31,421

BOSTON ARRIVALS.

NONE.

PARA EXPORTS OF INDIA-RUBBER, APRIL, 1910 (In KILOGRAMS).

NEW YORK.					EUROPE.					TOTAL.	
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Gruner & Co.....	65,101	11,400	.....	1,609	78,110	212,129	34,231	175,955	152,776	575,091	653,201
E. Pinto Alves & Co.....	.....	.....	9,570	.....	9,570	129,284	10,281	112,412	54,918	306,895	310,465
The Alves Braga Rubber Estate and Trading Co.....	.....	.....	.....	.....	.....	228,947	26,672	36,107	12,253	303,979	303,979
Adelbert H. Alden, Ltd.....	69,897	9,748	6,464	.....	86,109	19,026	2,051	27,474	20,790	69,341	155,450
Gordon & Co.....	.....	.....	.....	.....	.....	65,831	10,894	16,879	47,092	140,696	140,696
J. Marques & Co.....	.....	.....	.....	.....	.....	41,777	11,605	28,427	5,384	87,193	87,193
R. Suarez & Co.....	.....	.....	.....	.....	.....	55,400	602	13,894	12,445	82,341	82,341
R. O. Ahlers & Co.....	.....	.....	3,411	30,822	34,233	18,063	.....	3,280	.....	21,343	55,576
Scholz, Hartje & Co.....	1,020	170	8,580	990	10,760	15,552	1,463	2,277	5,660	24,952	35,712
Pires, Teixeira & Co.....	.....	.....	.....	.....	.....	12,580	.....	21,780	.....	34,360	34,360
Braga, Sobrinho & Co.....	.....	.....	.....	.....	.....	15,563	2,663	7,250	2,980	28,456	28,456
De Lagotellerie & Co.....	.....	.....	.....	.....	.....	.....	.....	10,560	.....	10,560	10,560
Sundry small shippers.....	1,700	170	4,290	.....	6,160	2,250	875	.....	3,850	10,010	10,010
Itacatiara direct.....	.....	.....	.....	.....	.....	5,340	.....	3,218	487	9,045	9,045
Manaos direct.....	67,006	21,324	38,272	33,362	159,864	567,563	89,294	221,736	747,521	1,626,114	1,785,978
Iquitos direct.....	.....	306	.....	913	1,219	19,043	2,240	12,741	147,458	181,482	182,701
Total April.....	204,724	43,018	72,196	66,087	386,025	1,408,348	192,871	684,155	1,220,324	3,505,698	3,891,723
Total, March.....	616,977	117,403	328,517	210,772	1,273,669	1,636,222	238,439	538,807	922,083	3,335,551	4,609,220
Total, February.....	1,249,571	259,296	762,781	318,830	2,590,478	1,274,751	155,070	470,983	975,370	2,870,174	5,466,652
Total, January.....	1,540,151	325,343	831,917	400,144	3,097,555	1,119,634	91,349	340,073	565,228	2,116,284	5,213,839



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JULY 1, 1910.

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Antwerp.

MAY 26.—As was to be expected, after the auctions in London and Liverpool, to-day's rubber sale yielded negative results. The struggle between buyers and sellers goes on unceasingly, the former being practically unanimous in declining to make bids, while the latter persist in refusing the concessions demanded by the buyers.

Notwithstanding the fact that the buyers, and more especially the American interests, have been holding back for some time past, stocks everywhere are smaller than they were last year. The figures reached in the decline in the prices of rubber seem reasonable to us, and there is a possibility of the market's picking up in the near future, although the season may not be propitious for this.

The prices paid to-day were so fantastic and irregular that it would be unwise to draw any conclusion from them as a basis for the average decline, but on the whole, the decline amounted to about 15 per cent. (or about 3 francs per kilogram), as compared with the prices of the sale a month ago.

As regards plantation rubber, only a few small, medium grade lots were sold at a decline of 5.80 francs—i. e., 22.56 per cent. The "crêpe" I and II were withdrawn for lack of sufficiently high bids.—Zeller, Villingier & Co.

RUBBER STATISTICS FOR MAY.

DETAILS	1910.	1909.	1908.	1907.	1906.
Stocks, April 30.....kilos	470,468	607,787	717,913	461,573	880,458
Arrivals in May.....	190,058	515,061	415,404	644,324	656,759
Congo sorts.....	128,052	442,098	337,368	537,136	536,564
Other sorts.....	62,006	72,963	78,036	87,188	120,195
Aggregating.....	660,526	1,122,848	1,133,317	1,705,897	1,537,217
Sales in May.....	116,663	433,610	361,740	352,983	811,966
Stocks, May 31.....	543,863	689,238	771,577	752,914	725,251
Arrivals since Jan. 1.....	1,659,607	1,973,430	2,144,762	2,281,955	2,728,448
Congo sorts.....	1,299,338	1,443,130	1,859,791	1,938,228	2,110,079
Other sorts.....	360,269	530,300	284,971	343,727	618,369
Sales since Jan. 1.....	1,657,256	1,879,927	2,380,079	2,187,225	2,738,384

RUBBER ARRIVALS FROM THE CONGO.

JUNE 9.—By the steamer *Leopoldville*:

Bunge & Co.....(Société Générale Africaine) kilos	64,400
Do.....(Comptoir Commercial Congolais)	14,000
Do.....(Comité Spécial Katanga)	3,800
Do.....(Société Abir)	300
Do.....(Société Anversoise)	225
Do.....(Chemins de fer Grands Lacs)	3,100
Société Coloniale Anversoise.....(Cie. du Kasai)	58,000
Do.....(Sud. Cameroun)	9,800
Société Equatoriale Congolaise.....	300
Congo Trading Co.....	400
Société Générale de Commerce.....(Alimaïenne)	1,450
L. & W. Van de Velde.....	4,000
	159,775

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

From January 1 to May 2, 1909 and 1910. Compiled by the Ceylon Chamber of Commerce.

	1909.	1910.
To Great Britain.....pounds	216,589	383,285
To United States.....	86,871	352,122
To Canada.....	6,629	1,911
To Belgium.....	7,387	14,547
To Germany.....	608	6,932
To Italy.....	6,491	452
To Australia.....	1,639	....
To France.....	....	....
Total.....	326,214	759,299

[Same period 1908—219,025 pounds; same 1907—160,625].

TOTAL EXPORTS FROM MALAYA.

[January 1 to March 31, 1910.]

[Reported by BARLOW & Co., Singapore.]

	Pounds.		Pounds.
To Great Britain.....	2,565,696	To Australia	173,164
To other Europe.....	332,114	To Ceylon	193,752
To United States.....	10,729		
To Japan	6,307	Total	3,181,762

Three Months' Exports for Three Years.

	1908.	1909.	1910.
From Singapore.....pounds	483,334	574,490	780,912
From Penang.....	297,892	786,903	494,122
From Port Swettenham.....	....	....	1,906,728
Total.....	781,226	1,361,393	3,181,762

EXPORTS FROM THE FEDERATED MALAY STATES.

[During the first three months of 1909 and 1910.]

[Supplied by the Commissioner of Trade and Commerce.]

States.	1909.	1910.
Perak.....pounds	185,061	460,254
Selangor.....	700,822	1,375,758
Negri Sembilan.....	261,486	560,509
Pahang.....	Nil.	65
Total.....	1,148,269	2,396,586

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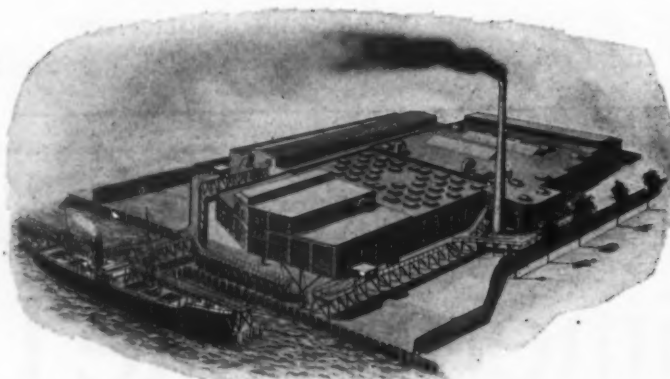
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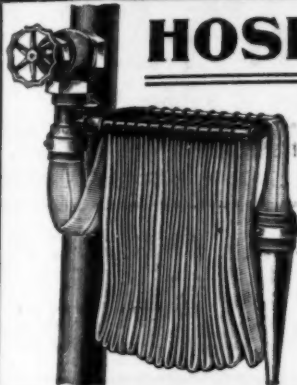
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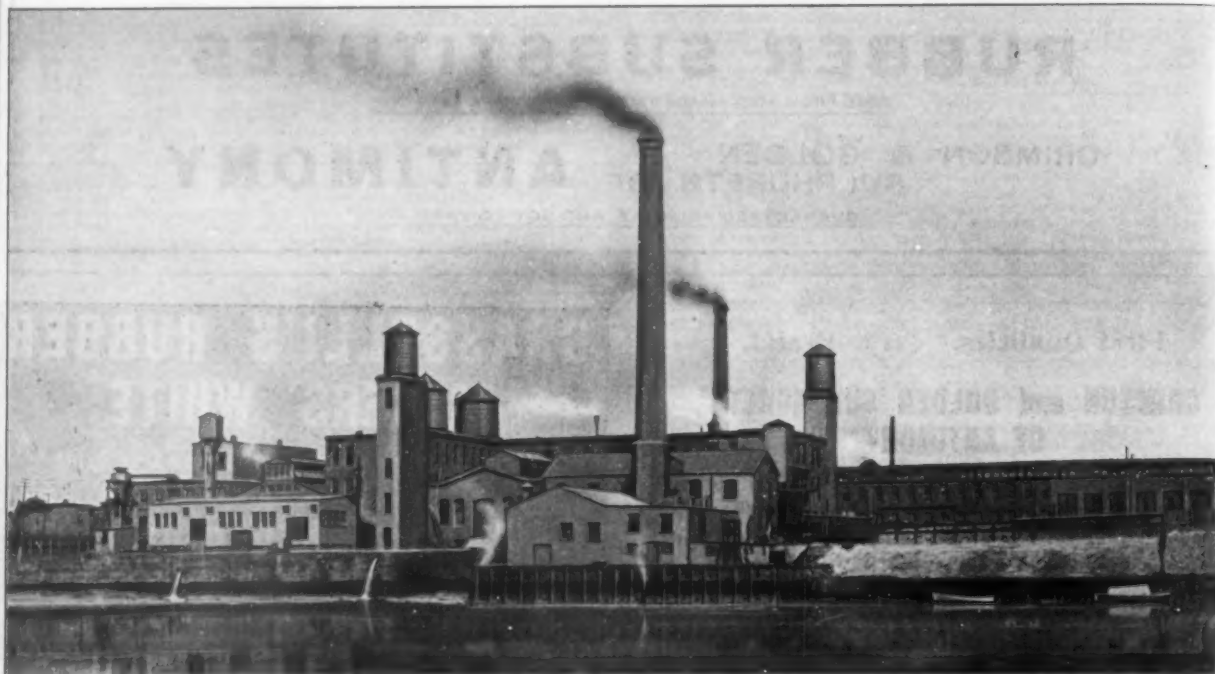
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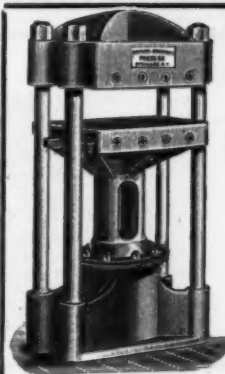
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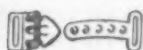
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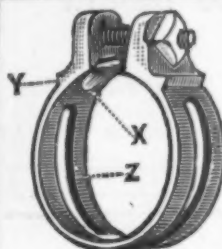
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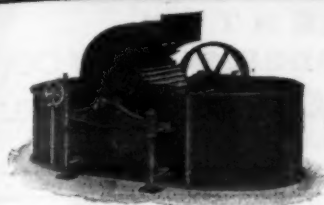
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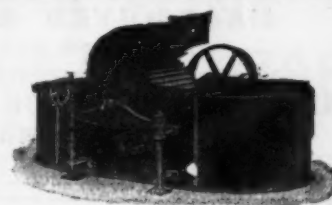
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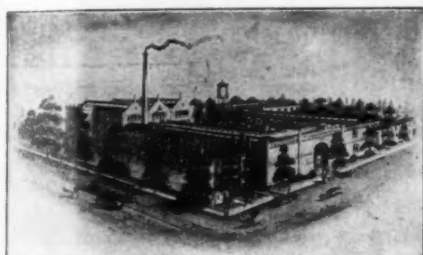
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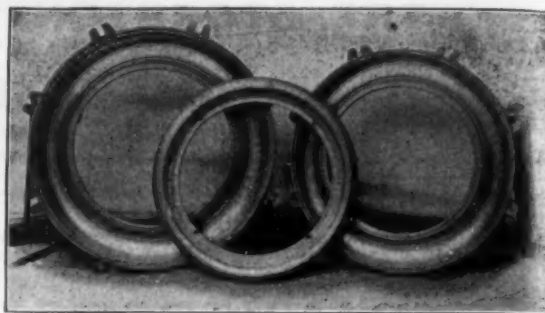
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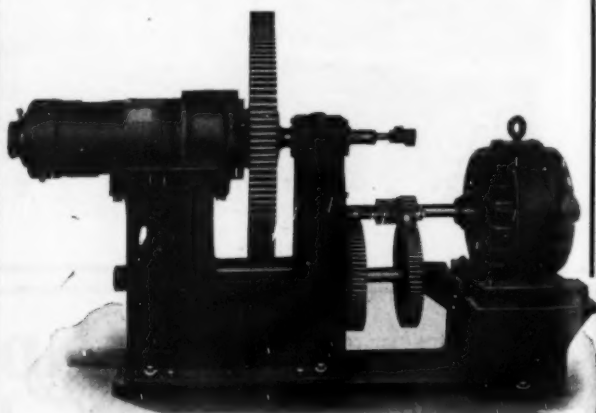
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See THE INDIA RUBBER WORLD, March 1, 1910—page 202.

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The Publishers' Page

Our Correspondence from Manaos.

THE article which follows is found in a leading position in the *Revista* (official review) of the Commercial Association of Manaos, the president of which body was president also of the Rubber Congress held lately on the Amazon. The article is reproduced with a view to indicating the favor which has been shown to the letters from the great rubber country by the editor, now running serially in THE INDIA RUBBER WORLD:

CONGRESS OF 1910.

THE INDIA RUBBER WORLD, of New York, began the publication, in its issue of last April of comprehensive reports on the Rubber Congress of 1910, which was attended by Mr. H. C. Pearson, its editor-in-chief. This gentleman announces in a footnote that in due course he will publish an exhaustive study of what he saw and observed during his stay in Manaos. We are accordingly awaiting the appearance of this work with anxiety easily imaginable, as it will beyond all question be of invaluable service in promoting the interests of our state abroad.

The correspondence alluded to above was published under the heading of "Rubber Congress at Manaos." Following the cuts of the Amazonas Theater were two panoramic views, one showing the "General Osorio Plaza" and the other view showing one of the "Matriz Gardens," with the observation that a planting of several specimens of *Hevea* was made here in commemoration of the Congress. The cut of the theater contains a note explanatory of its construction and ornamentation, and stating that the sessions of the Congress and the two lectures of Mr. Pearson, with an illustrated exposition of the planting of the *Hevea* in Ceylon and its process of manufacture in the North American factories, were held in its hall of honor and auditorium.

It also prints four views of the Rubber Exposition in one of the halls of the Public Library, and the portraits of his Excellency, the Governor of the State, and Mr. Scholz, president of our Commercial Association, in addition to which there is a view of one of the business streets of Belem [Pará].

It will be seen that the correspondent had in view the preparation of an exhaustive series of reports, and his comments, both as regards the Congress and the Exposition, are quite to the point and very interesting. They disclose their author's acute sense of perception and impartial point of view. He gives a flattering description of the city, saying its streets are intersected with electric tramways; he speaks of its excellent system of illumination; he mentions the wharves of the port, and refers to the extraordinary movement of steamers entering and leaving the bay. He adds that the members of the Congress, and even persons not invested with this dignity, received splendid hospitality from the officials and were accorded the finest kind of a reception in business circles. From the people in general they were also greeted with an enthusiastic reception.

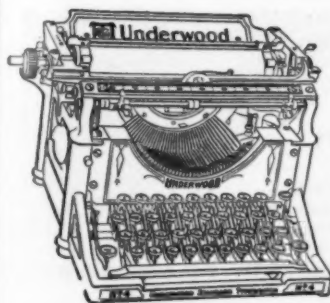
Among the matters discussed in the Congress the ones most favorably received were that of Dr. Carlos Rey de Castro on co-operative companies in Amazonas and of Dr. J. A. Magalhães on hygiene and medical treatment on the rubber plantations. As regards this latter subject, the minister of agriculture telegraphed the Governor of the State that the President of the Republic would in due course submit a bill to this end for the consideration of the Federal Congress.

He also alludes to the means of transportation, etc., to the theses that received an award, to the recommendations for the planting of the *Hevea* that received the stamp of approval, and concludes by saying the second congress will meet in Manaos in 1912.

* * *

THE management of an important rubber planting company, with estates in Mexico, write as follows:

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- I.—Grades of Crude Rubber; Physical Characteristics.
- II.—Some Little Known Rubbers and Pseudo Gums.
- III.—Primary Processes—Washing, Mixing and Calendaring.
- IV.—Vulcanizing Ingredients and Processes.
- V.—Ingredients used in Dry Mixing in Rubber Compounds.
- VI.—Substitutes for India-rubber and Gutta-percha.
- VII.—Reclaimed Rubber and its Uses.
- VIII.—Resins, Balsams, and Waxes used in Compounding.
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- X.—Acids, Alkalies, and Their Derivatives.
- XI.—Vegetable, Mineral, and Animal Oils.
- XII.—Solvents used in India-rubber Proofing and Cementing and in Commercial Cements.
- XIII.—Miscellaneous Processes and Compounds, including Waterproofing Compounds.
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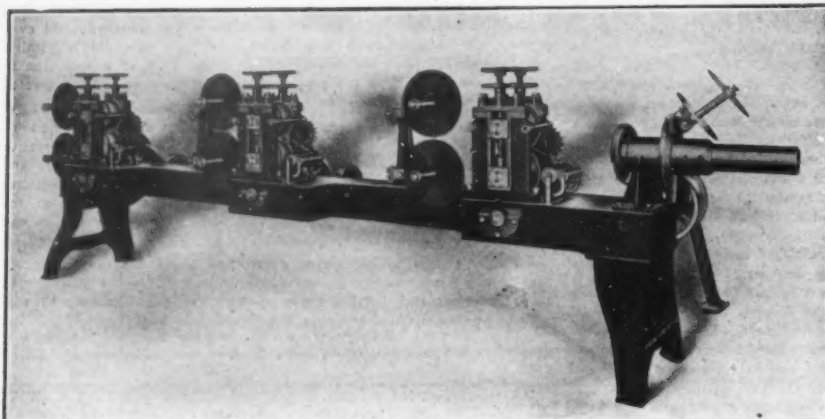
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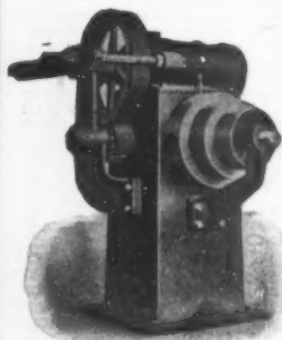
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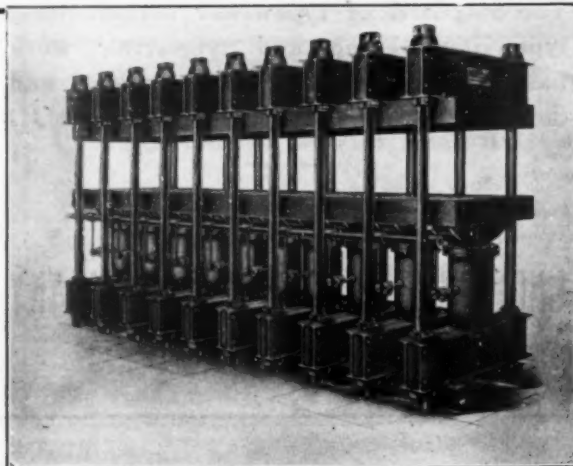
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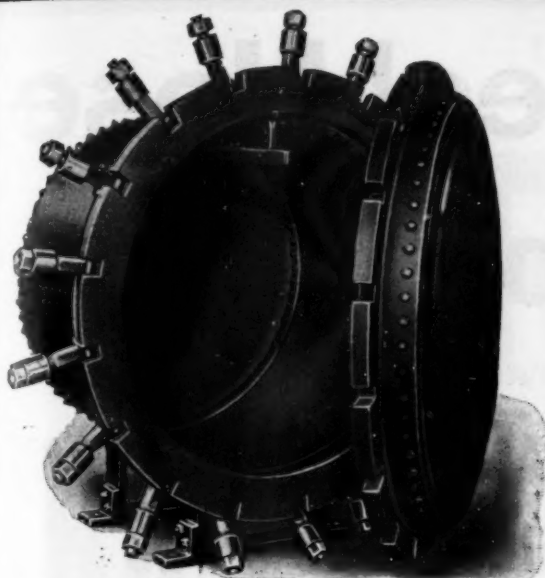
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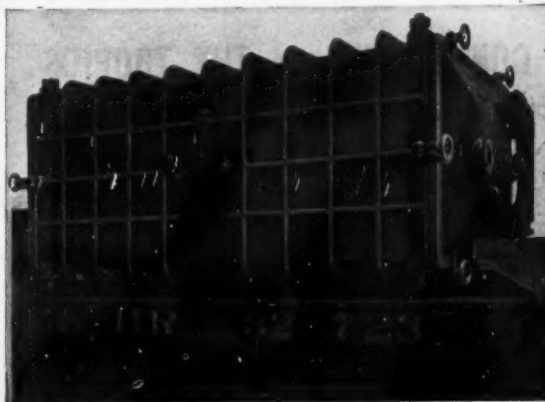
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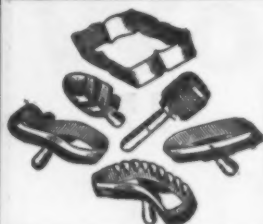
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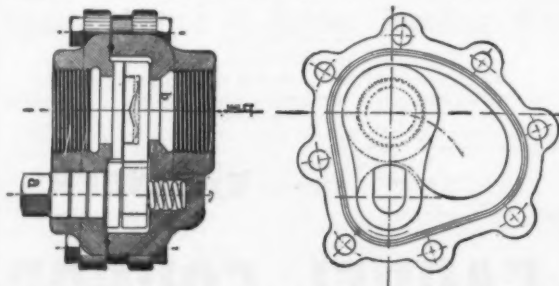
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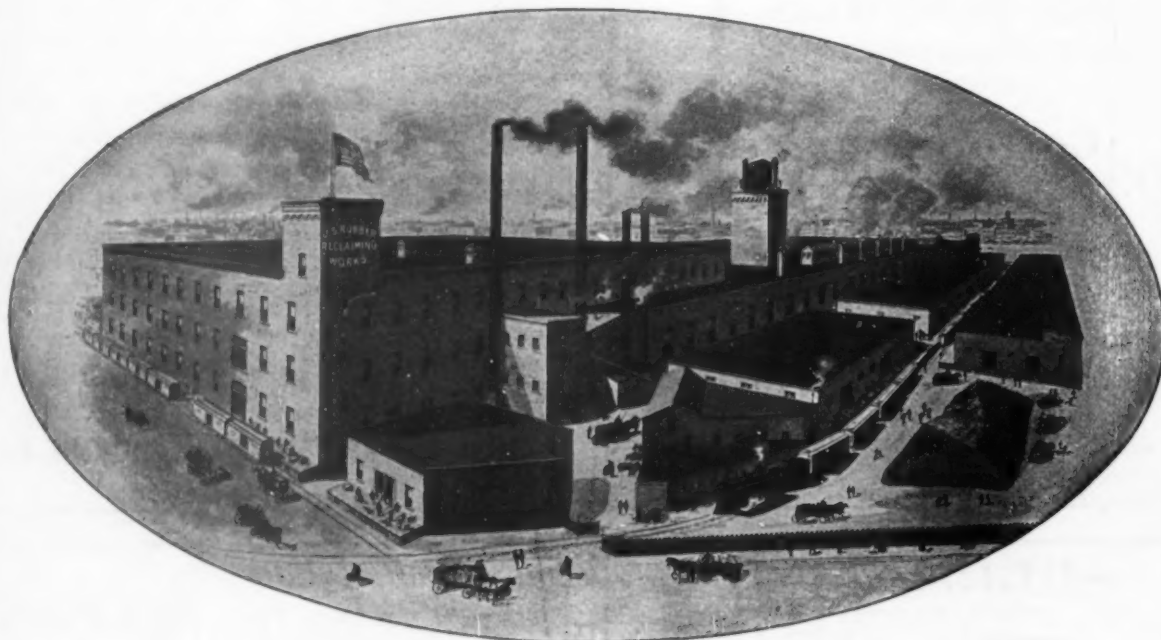
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The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
New York Belting & Packing Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

Cotton and Linen.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Mfg. Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Boston Belting Co., Boston—New York.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
A. Schrader's Son, Inc., New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Bands, Straps & Menders.

W. D. Allen Mfg. Co., Chicago.
Boston Woven Hose & Rubber Co.
F. R. Howell Brass Works, Phila., Pa.
A. Schrader's Son, Inc., New York.
William Yerdon, Fort Plain, N. Y.
Lawn-Hose Supporters.
W. D. Allen Mfg. Co., Chicago.
C. J. Bailey & Co., Boston.

Lawn Sprinklers.

W. D. Allen Mfg. Co., Chicago.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston—New York.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Keystone R. M. Co., Erie, Pa.
Manhattan Rubber Mfg. Co., New York.
Morgan & Wright, Detroit, Mich.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—New York.

Mould Work.

(See Mechanical Rubber Goods.)
Ajax-Grieb Rubber Co., Trenton, N. J.
Atlantic R. Co., Hyde Park, Mass.
H. O. Canfield Co., Bridgeport, Ct.
Canton Rubber Co., Canton, O.
Cincinnati R. M. Co., Cincinnati, O.
Davidson Rubber Co., Boston.
David Rubber Co., Providence, R. I.
Essex Rubber Co., Trenton, N. J.
Fauntless Rubber Co., Akron, O.
Hodgman Rubber Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
Morgan & Wright, Detroit, Mich.
Plymouth Rubber Co., Stoughton, Mass.
The Seamless Rub. Co., New Haven, Conn.
Tyer Rubber Co., Andover, Mass.

Oil Well Supplies.

Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Revere Rubber Co., Boston—Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Packing.

(See Mechanical Rubber Goods.)
Jenkins Bros., New York.
Mattson Rubber Co., Lodi, N. J.
The Seamless Rub. Co., New Haven, Conn.

Paper Machine Rollers.

Boston Belting Co., Boston—New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Manhattan Rubber Mfg. Co., New York.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
H. O. Canfield Co., Bridgeport, Ct.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Morgan & Wright, Detroit, Mich.
Republic Rubber Co., Youngstown, O.
Voorhees Rubber Mfg. Co., Jersey City.
Western Rubber Works, Goshen, Ind.

Pump Valves.

(See Mechanical Rubber Goods.)
Jenkins Bros., New York.
Mattson Rubber Co., Lodi, N. J.
Massachusetts Chemical Co., Walpole, Mass.
Schacht Rubber Co., Huntington, Ind.

Rock Drill Couplings.

F. R. Howell Brass Works, Phila., Pa.

Rolls—Rubber Covered.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cincinnati R. M. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
Morgan & Wright, Detroit, Mich.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
The Seamless Rub. Co., New Haven, Conn.
Voorhees Rubber Mfg. Co., Jersey City.

Sewing Machine Rubbers.

Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
- Springs—Rubber.
Boston Belting Co., Boston—New York.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.

Stair Treads.

Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati R. M. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

RUBBER BUYERS' DIRECTORY—Continued.

Stair Treads—Continued.

New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Vorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston-New York.

Tiling.

American Hard Rubber Co., N. Y.
Canadian Rubber Co. of Montreal, Ltd.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.

New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Vorhees Rubber Mfg. Co., Jersey City.

Tubing.

(See Mechanical Rubber Goods.)

American Hard Rubber Co., New York.
Boston W. H. & R. Co., Boston.
Cincinnati R. M. Co., Cincinnati, O.
Davidson Rubber Co., Boston.

Davidson Rubber Co., Providence, R. I.
Mattson Rubber Co., Lodi, N. J.
Morgan & Wright, Detroit, Mich.
Plymouth Rubber Co., Stoughton, Mass.

Rubber Products Co., Barberton, O.
Star Rubber Co., Akron, O.
The Seamless Rub. Co., New Haven, Conn.

Tyer Rubber Co., Andover, Mass.
Vorhees Rubber Mfg. Co., Jersey City.
Everlasting Blow-Off Valves.

Osgood Sayern, Philadelphia, Pa.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.

B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.

Manhattan Rubber Co., Lodi, N. J.
Mechanical Rubber Mfg. Co., Chicago.
National India Rubber Co., Bristol, R. I.

New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.

Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.

Cincinnati R. M. Co., Cincinnati, O.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.

Jenkins Bros., N. Y.
Manhattan Rubber Mfg. Co., New York.
Manhattan Rubber Co., Lodi, N. J.

Morgan & Wright, Detroit, Mich.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.

Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Valves.

(See Mechanical Rubber Goods.)
Essex Rubber Co., Trenton, N. J.
Jenkins Bros., New York-Chicago.

Mattson Rubber Co., Lodi, N. J.
Schacht Rubber Co., Huntington, Ind.

Vulcanite Emery Wheels.
Manhattan Rubber Mfg. Co., Passaic, N. J.

New York Belting & Packing Co., Ltd., New York.

Wringer Rolls.

Canadian Rubber Co., of Montreal.
Cincinnati R. M. Co., Cincinnati, O.

Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.

Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.

DRUGGISTS' AND STATIONERS' SUNDRIES.

Atomizers. Nipples.
Bandages. Syringes.

Bulbs. Water Bottles.
Druggists' Sundries, Generally.

Ajax-Grieb Rubber Co., Trenton, N. J.
American Hard Rubber Co., New York.

Atlantic R. Co., Hyde Park, Mass.
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
David Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Kibele & Co., August, Weissenfels, Ger.
Luserne Rubber Co., Trenton, N. J.
Mass. Chemical Co., Walpole, Mass.
National India Rubber Co., Bristol, R. I.
Parker, Stearns & Co., N. Y.
Pirelli & Co., Milan, Italy.
Rubber Products Co., Barberton, O.
Seamless Rubber Co., New Haven, Ct.
Star Rubber Co., Akron, O.
Tyer Rubber Co., Andover, Mass.
Walpole Rubber Co., Granby, P. Q.
Walpole Rubber Works, Walpole, Mass.

Air Goods.

The Seamless Rub. Co., New Haven, Conn.

Balls, Dolls and Toys.

New York Rubber Co., New York.

Combination Fountain Syringe
and Hot Water Bottle Fix-
tures.

A. Schrader's Son, Inc., N. Y.

Combs.

American Hard Rubber Co., New York.

Elastic Bands.

Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
David Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.

Tyer Rubber Co., Andover, Mass.

Electrician Gloves.

Star Rubber Co., Akron, O.

Eraser Rubbers.

B. F. Goodrich Co., Akron, O.

Finger Cots.

Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.

David Rubber Co., Providence.
Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.

The Rubber Products Co., Barberton, O.
The Seamless Rub. Co., New Haven, Conn.
Star Rubber Co., Akron, O.

Gloves.

Canadian Rubber Co., of Montreal.
Canton Rubber Co., Canton, O.
David Rubber Co., Providence, R. I.

Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.

Rubber Products Co., Barberton, O.
The Seamless Rub. Co., New Haven, Conn.
Star Rubber Co., Akron, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co., of Montreal.
Davidson Rubber Co., Boston.

H. O. Canfield Co., Bridgeport, Ct.
David Rubber Co., Providence, R. I.
Luserne Rubber Co., Trenton, N. J.

Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Shretings.

Atlantic R. Co., Hyde Park, Mass.
Cleveland Rubber Co., Cleveland, O.
David Rubber Co., Providence, R. I.

B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Hot Water Bottle Stopples.

A. Schrader's Son, Inc., N. Y.

Ice Bags and Ice Caps.

Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.

David Rubber Co., Providence.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.

National India Rubber Co., Bristol, R. I.
The Rubber Products Co., Barberton, O.
The Seamless Rub. Co., New Haven, Conn.

Life Preservers.

David Rubber Co., Providence.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Shower Bath Sprinklers.

David Rubber Co., Providence.

Sponges (Rubber).

Faultless Rubber Co., Ashland, O.
N. Tire Rubber Sponge Co., Chicago.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
David Rubber Co., Providence, R. I.

B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stopples (Metal).

A. Schrader's Son, Inc., N. Y.

Stopples (Rubber).

Continental R. Works, Erie, Pa.
Cleveland Rubber Co., Cleveland, O.
David Rubber Co., Providence, R. I.

Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.

New York Belting & Packing Co., N. Y.
The Seamless Rub. Co., New Haven, Conn.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
David Rubber Co., Providence, R. I.

B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
The Seamless Rub. Co., New Haven, Conn.

Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co., of Montreal.
Davidson Rubber Co., Boston.

David Rubber Co., Providence.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.

The Rubber Products Co., Barberton, O.
The Seamless Rub. Co., New Haven, Conn.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND
SURFACE GOODS.

Air Goods (Rubber).

Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.

David Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.

New York Rubber Co., New York.
National India Rubber Co., Providence.
Rubber Products Co., Barberton, O.

Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co., of Montreal.
Mechanical Fabric Co., Providence, R. I.

National India Rubber Co., Bristol, R. I.

Barbers' Bibs.

Cleveland Rubber Co., Cleveland, O.
David Rubber Co., Providence, R. I.

Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Atlantic R. Co., Hyde Park, Mass.
David Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.

Rubber Products Co., Barberton, O.

Bellows Cloths.

Atlantic R. Co., Hyde Park, Mass.
Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.

Hodgman Rubber Co., New York.

Calendering.

Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Gutta Percha & Rubber Mfg. Co., Toronto.

Clothing.

Canadian Rubber Co., of Montreal.
Chicago Rubber Clothing Co., Racine, Wis.

Cleveland Rubber Co., Cleveland, O.
Gutta Percha & Rubber Mfg. Co., of Toronto.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Pirelli & Co., Milan, Italy.

Cravenette Co., Ltd.

Diving Apparatus.

A. Schrader's Son, Inc., New York.

Hodgman Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.

National India Rubber Co., Bristol, R. I.

Leggings.

Cleveland Rubber Co., Cleveland, O.

Hodgman Rubber Co., New York.

National India Rubber Co., Bristol, R. I.

Mackintoshes.

(See Clothing.)

Proofing.

Canadian Rubber Co., of Montreal.
Plymouth Rubber Co., Stoughton, Mass.
Schwarzwalder Co., Philadelphia, Pa.

Rain Coats.

Cravenette Co., Ltd.
Rubber Coated Cloths.
Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR.

Boots and Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Canadian Rubber Co., of Montreal.

L. Candee & Co., New Haven, Conn.
Converse Rubber Shoe Co., Malden, Mass.
B. F. Goodrich Co., Akron, O.

Gutta Percha & Rubber Mfg. Co., of Toronto.
Hood Rubber Co., Boston.
Lycorning Rubber Co., Williamsport, Pa.

Meyer Rubber Co., New York.
National India Rubber Co., Boston.
United States Rubber Co., New York.

Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Buckles.

Crane Buckle Co., Boston.

Heels and Soles.

Atlantic R. Co., Hyde Park, Mass.
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.

Canadian Rubber Co., of Montreal.
Essex Rubber Co., Trenton, N. J.
Foster Rubber Co., Boston.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Massachusetts Chemical Co., Walpole, Mass.

Morgan & Wright, Detroit, Mich.
Plymouth Rubber Co., Stoughton, Mass.
Western Rubber Works, Goshen, Ind.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co., of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP
RUBBER.

Dental Gum.

American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.

Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.

David Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.

The Seamless Rub. Co., New Haven, Conn.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., Lodi, N. J.

Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.

New York Belting & Packing Co., N. Y.

ELECTRICAL.

Electrical Supplies.

American Hard Rubber Co., New York.
Joseph Stokes Rubber Co., Trenton, N. J.

Massachusetts Chemical Co., Boston.
Mattson Rubber Co., Lodi, N. J.

Tyer Rubber Co., Andover, Mass.

Friction Tape.

Boston Belting Co., Boston.

Boston Woven Hose & Rubber Co.

Canadian Rubber Co., of Montreal.

Cleveland Rubber Co., Cleveland, O.

B. F. Goodrich Co., Akron, O.

Home Rubber Co., Trenton, N. J.

Massachusetts Chemical Co., Boston.

Mechanical Rubber Co., Chicago.

National India Rubber Co., Bristol, R. I.

Revere Rubber Co., Boston-New York.

St. Louis R. Cement Co., St. Louis, Mo.

Hard Rubber Goods.

American Hard Rubber Co., New York.

Canadian Rubber Co., of Montreal.

Luserne Rubber Co., Trenton, N. J.

Joseph Stokes Rubber Co., Trenton, N. J.

The Seamless Rub. Co., New Haven, Conn.

RUBBER BUYERS' DIRECTORY—Continued.

Insulating Compounds. Canadian Rubber Co. of Montreal. Gutta Percha & Rubber Mfg. Co., Toronto. Massachusetts Chemical Co., Boston. Insulated Wire and Cables. The Indiana Rubber and Insulated Wire Co., Jonesboro, Ind. Kerite Ins. Wire & Cable Co., N. Y. National India Rubber Co., Providence. Insulated Wire Waxes. American Wax Co., Boston. Splicing Compounds. Boston W. H. & R. Co., Boston. Home Rubber Co., Trenton, N. J. Massachusetts Chemical Co., Walpole, Mass.	Cleveland Rubber Co., Cleveland, O. Faultless Rubber Co., Akron, O. B. F. Goodrich Co., Akron, O. Hodgman Rubber Co., New York. National India Rubber Co., Bristol, R. I. Golf Balls. Boston Belting Co., Boston. Canadian Rubber Co. of Montreal. Davidson Rubber Co., Boston. Essex Rubber Co., Trenton, N. J. B. F. Goodrich Co., Akron, O. The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.	Submarine Outfits. Hodgman Rubber Co., New York. A. Schrader's Sons, Inc., New York.	N. J. Car Spring & Rubber Co., Jersey City, N. J. New York Belting & Packing Co., N. Y. St. Louis Rubber Cement Co., St. Louis, Mo.
SPORTING GOODS. Foot Balls. Canadian Rubber Co. of Montreal.	Sporting Goods. Canadian Rubber Co. of Montreal. Faultless Rubber Co., Akron, O. B. F. Goodrich Co., Akron, O. Hodgman Rubber Co., New York. Tyler Rubber Co., Andover, Mass. Striking Bags. Canadian Rubber Co. of Montreal. Cleveland Rubber Co., Cleveland, O. Faultless Rubber Co., Akron, O. B. F. Goodrich Co., Akron, O. Rubber Products Co., Barberton, O.	MISCELLANEOUS. Armor for Hose. Woven Steel Hose & Rubber Co., Trenton, N. J. Boxes (Wood). Henry H. Sheip & Co., Philadelphia. Brass Fittings. A. Schrader's Son, New York. Cement (Rubber). Boston Belting Co., Boston. Canadian Rubber Co. of Montreal. B. F. Goodrich Co., Akron, O. Manhattan Rubber Mfg. Co., New York. Massachusetts Chemical Co., Walpole, Mass. Morgan & Wright, Detroit, Mich.	Chemists. Maywald, F. J., New York. Stephen P. Sharples, Boston, Mass. Consulting Engineers. Akron Rubber Engineering Co., Akron, O. Manufacturing Chemists. Farrington & Co., Boston. Rubber Journals. Gummi-Zeitung, Dresden, Germany. L'Agriculture des Pays Chauds, France. Rubber Tree Seeds. J. P. William & Bros., Heneratgoda, Ceylon. Tapping Tools. G. Van den Kerckhove, Brussels, Belgium. Valves for Air Goods. A. Schrader's Son, Inc., New York.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER MACHINERY.

Acid Tanks.
 Birmingham Iron Foundry, Derby, Conn.
 Farrel F. & M. Co., Ansonia, Conn.

Air Compressors.
 Williams F. & M. Co., Akron.

Band Cutting Machines.
 A. Adamson, Akron, O.

Belt Folding Machines.
 Birmingham Iron Foundry, Derby, Conn.
 Farrel F. & M. Co., Ansonia, Conn.

Branding Dies.
 Horace E. Fine, Trenton, N. J.
 H. A. Huislander, Trenton.

Belt Slitters.
 Farrel F. & M. Co., Ansonia, Conn.

Belt Stretchers.
 Birmingham Iron Foundry, Derby, Conn.
 Farrel F. & M. Co., Ansonia, Conn.
 Hoggson & Pettis Mfg. Co., New Haven.

Boilers.
 William R. Thropp, Trenton, N. J.
 John E. Thropp & Sons Co., Trenton, N. J.

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 New England Butt Co., Providence, R. I.

Calenders.
 Birmingham Iron Foundry, Derby, Conn.
 David Bridge & Co., Castleton, Manchester, Eng.
 Farrel F. & M. Co., Ansonia, Conn.
 Textile-Finishing Machinery Co., Providence, R. I.

Castings.
 A. Adamson, Akron, O.
 Birmingham Iron Foundry, Derby, Conn.
 Farrel F. & M. Co., Ansonia, Conn.
 McFarland Fdry. & Mach. Co., Trenton, N. J.
 Williams F. & M. Co., Akron.

Chucks (Lathes).
 Hoggson & Pettis Mfg. Co., New Haven.

Churns.
 American Tool & Machine Co., Boston.

Cloth Dryers.
 Farrel F. & M. Co., Ansonia, Conn.

Clutches.
 Farrel F. & M. Co., Ansonia, Conn.
 Williams F. & M. Co., Akron.

Cotton Goods.
 Sheetings, Drills, Yarns, Fabrics.
 Boston Yarn Co., New York.
 J. H. Lane & Co., N. Y.
 J. Spencer Turner Co., New York.
 Wellington Sears & Co., Boston, Mass.

Crackers.
 Birmingham Iron Foundry, Derby, Conn.
 Farrel F. & M. Co., Ansonia, Conn.

Devulcanizers.
 Biggs Boiler Works Co., Akron, O.
 Birmingham Iron Foundry, Derby, Conn.
 Edred W. Clark, Hartford, Conn.
 Farrel F. & M. Co., Ansonia, Conn.
 John E. Thropp & Sons Co., Trenton, N. J.
 William R. Thropp, Trenton, N. J.

Dies.

Horace E. Fine Co., Trenton, N. J.
 Hoggson & Pettis Mfg. Co., New Haven.
 Housatonic Mach. & Tool Co., Bridgeport, Conn.
 Phila. Cons. Die Co., Phila., Pa.
 Taplin, Rice-Clerkin Co., Akron, O.
 Williams F. & M. Co., Akron.

Doubling Machines.
 American Tool & Machine Co., Boston.
 Farrel F. & M. Co., Ansonia, Conn.

Drying Machines.
 Buffalo Foundry & Machine Co., Buffalo, N. Y.
 David Bridge & Co., Castleton, Manchester, Eng.
 Birmingham Iron Foundry, Derby, Conn.
 Joseph P. Devine, Buffalo, N. Y.
 Farrel F. & M. Co., Ansonia, Conn.
 Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.
 Farrel F. & M. Co., Ansonia, Conn.
 Textile-Finishing Machinery Co., Providence, R. I.

Engine Steam.
 William R. Thropp, Trenton, N. J.
 John E. Thropp & Sons Co., Trenton, N. J.

Engraving Rolls.
 Farrel F. & M. Co., Ansonia, Conn.
 Hoggson & Pettis Mfg. Co., New Haven.

Grinders and Mixers.
 Birmingham Iron Foundry, Derby, Conn.
 Farrel F. & M. Co., Ansonia, Conn.
 John E. Thropp & Sons Co., Trenton, N. J.
 William R. Thropp, Trenton, N. J.

Hangers.
 Farrel F. & M. Co., Ansonia, Conn.

Hose Machines.
 A. Adamson, Akron, O.
 Birmingham Iron Foundry, Derby, Conn.
 Farrel F. & M. Co., Ansonia, Conn.
 New England Butt Co., Providence, R. I.

Hydraulic Accumulators.
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 Williams F. & M. Co., Akron.
 R. D. Wood & Co., Phila., Pa.

Insulating Machinery.
 New England Butt Co., Providence, R. I.
 John Royle & Sons, Paterson, N. J.

Lathes—Hard Rubber.
 A. Adamson, Akron, O.

Lathes—Jar Ring.
 A. Adamson, Akron, O.
 Birmingham Iron Foundry, Derby, Conn.
 John E. Thropp & Sons Co., Trenton, N. J.
 William R. Thropp, Trenton, N. J.

Machinists' Tools.
 Hoggson & Pettis Mfg. Co., New Haven.

Moulds.
 A. Adamson, Akron, O.
 Birmingham Iron Foundry, Derby, Conn.

Continental Rubber Works, Erie, Pa.
 Hoggson & Pettis Mfg. Co., New Haven.
 Housatonic Mach. & Tool Co., Bridgeport, Conn.
 McFarland Fdry. & Mach. Co., Trenton, N. J.
 Taplin, Rice-Clerkin Co., Akron, O.
 John E. Thropp & Sons Co., Trenton, N. J.
 Williams Foundry & Machine Co., Akron, O.

Mold Engraving Co.
 H. A. Huislander, Trenton, N. J.

Pattern Makers.
 McFarland Fdry. & Mach. Co., Trenton, N. J.

Pillow Blocks.
 Farrel F. & M. Co., Ansonia, Conn.
 McFarland Fdry. & Mach. Co., Trenton, N. J.

Presses (for Rubber Work).
 A. Adamson, Akron, O.
 Birmingham Iron Foundry, Derby, Conn.
 Boomer & Boeschert Press Co., Syracuse, N. Y.
 Edred W. Clark, Hartford, Conn.
 Farrel F. & M. Co., Ansonia, Conn.
 Monarch Machinery Co., New York.
 Perrin & Co., Wm. R., Chicago.
 John E. Thropp & Sons Co., Trenton, N. J.
 William R. Thropp, Trenton, N. J.
 Williams Foundry & Machine Co., Akron, O.
 R. D. Wood & Co., Phila.

Pumps.
 Birmingham Iron Foundry, Derby, Conn.
 Boomer & Boeschert Press Co., Syracuse.
 Farrel F. & M. Co., Ansonia, Conn.

Racks for Boot and Shoe Cars.
 Hoggson & Pettis Mfg. Co., New Haven.

Reducing Valves.
 Mason Regulator Co., Boston.

Rollers (Hand).
 Hoggson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.
 New England Butt Co., Providence, R. I.

Separators.
 Turner, Vaughn & Taylor Co., Cuyahoga Falls, O.

Shafting.
 Farrel F. & M. Co., Ansonia, Conn.

Spreaders.
 American Tool & Machine Co., Boston.
 Birmingham Iron Foundry, Derby, Conn.
 New England Butt Co., Providence, R. I.

Steam Traps and Specialties.
 Jenkins Bros., New York.
 Mason Regulator Co., Boston.

Steel Stamps.
 Horace E. Fine Co., Trenton, N. J.
 Hoggson & Pettis Mfg. Co., New Haven.

Stichers (Hands).
 Hoggson & Pettis Mfg. Co., New Haven.

Stock Shells.
 W. F. Gammeter, Cadiz, O.

Strip Covering Machines.
Strip Cutters.
 New England Butt Co., Providence, R. I.

Tire Molds.

John E. Thropp & Sons Co., Trenton, N. J.
 Williams Foundry & Machine Co., Akron, O.

Tire Repair Equipment.
 Williams F. & M. Co., Akron.

Tire Vulcanizing Presses.
 Williams F. & M. Co., Akron.

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 A. Adamson, Akron, O.
 Edred W. Clark, Hartford, Conn.
 Housatonic Mach. & Tool Co., Bridgeport, Conn.
 John Royle & Sons, Paterson, N. J.
 Williams Foundry & Machine Co., Akron, O.

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 Buffalo Foundry & Machine Co., Buffalo, N. Y.
 Joseph P. Devine Co., Buffalo, N. Y.

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 Birmingham Iron Foundry, Derby, Conn.

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 Biggs Boiler Works Co., Akron, O.
 Birmingham Iron Foundry, Derby, Conn.
 Farrel F. & M. Co., Ansonia, Conn.
 John E. Thropp & Sons Co., Trenton, N. J.
 William R. Thropp, Trenton, N. J.
 Williams F. & M. Co., Akron.
 R. H. Wood & Co., Phila.

Washers.

Birmingham Iron Foundry, Derby, Conn.
 David Bridge & Co., Castleton, Manchester, Eng.
 Farrel F. & M. Co., Ansonia, Conn.
 John E. Thropp & Sons Co., Trenton, N. J.
 William R. Thropp, Trenton, N. J.
 Turner, Vaughn & Taylor Co., Cuyahoga Falls, O.

Wrapping Machines.

Birmingham Iron Foundry, Derby, Conn.
 Farrel F. & M. Co., Ansonia, Conn.

SECOND-HAND MACHINERY.

W. C. Coleman Co., Boston.
 Philip McGorry, Trenton, N. J.
 M. Norton & Co., Charlestown, Mass.

FACTORY SUPPLIES.

Aluminum Flake.
 Aluminum Flake Co., Akron, O.

Antimony, Sulphurets of.
 Golden.

Actien-Ges. Georg Egestorff's Salzwärks
 Liden, Germany.
 Atlas Chemical Co., Newtonville, Mass.

Golden and Crimsons.
 Joseph Cantor, New York.
 Katzenbach & Bullock Co., Trenton, N. J.
 Wm. H. Scheel, New York.

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Stamford (Conn.) Rubber Supply Co.
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Balata.

George A. Alden & Co., Boston.
Robt. Badenhop, N. Y.
Raw Products Co., N. Y.

Barytes.

Gabriel & Schall, New York.

Benzol.

Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

Black Hypo.

Joseph Cantor, New York.
William H. Scheel, New York.
Tyske & King, London, England.

Carbon Bisulphide.

George W. Speaight, New York.
Chemicals.

George W. Speaight, New York.
S. P. Wetherill Co., Philadelphia, Pa.
Colors.

Joseph Cantor, New York.
Katsenbach & Bullock Co., Trenton, N. J.
William H. Scheel, New York.
Tyske & King, London, England.
S. P. Wetherill Co., Philadelphia, Pa.

Crude Rubber.

George A. Alden & Co., Boston.
Badenhop, Robt., New York.
W. C. Coleman Co., Boston.
Wallace L. Gough Co., New York.
Hagermeyer & Brunns, New York.
Adolph Hirsch Co., New York.
Raw Products Co., N. Y.
Rubber Trading Co., New York-Boston.

Dermatine.

The Dermatine Co., London.
Ducks and Drills (Cotton).
J. H. Lane & Co., New York.

Fossil Flour.

American Tripoli Co., Seneca, Mo.
Oxford-Tripoli Co., Ltd., N. Y.
Gilsomite.

William H. Scheel, New York.
Guayule Rubber.

E. S. Churchill, N. Y.
Continental Rubber Co.
E. S. Churchill, N. Y.
Chas. T. Wilson, New York.

Gutta-Percha.

George A. Alden & Co., Boston.
Robt. Badenhop, N. Y.
E. S. Churchill, N. Y.
W. C. Coleman Co., Boston.
Raw Products Co., N. Y.
Rubber Trading Co., New York-Boston.

Hydro-Carbon Products.

Geo. A. Alden & Co., Boston.
American Wax Co., Boston.
William H. Scheel, New York.
Raven Mining Co. of Utah, Chicago.

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Katsenbach & Bullock Co., Trenton, N. J.

Infusorial Earth.

Oxford-Tripoli Co., Ltd., N. Y.
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Kapak.

Raven Mining Co. of Utah, Chicago.

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Katsenbach & Bullock Co., Trenton, N. J.
Picher Lead Co., Chicago, Ill.
St. Louis Smelting & Refining Co., St. Louis.

Lithopone.

Gabriel & Schall, New York.
Mineral Rubber.
Geo. A. Alden & Co., Boston.
American Wax Co., Boston.

Paris White and Whiting.

H. F. Taintor Mfg. Co., New York.
Reclaiming Compounds.
Farrington & Co., Boston.

Reclaimed Rubber.

Alkali Rubber Co., Akron, O.
F. H. Appleton & Son, Boston.
Bloomington (N. J.) Soft Rubber Co.
E. H. Clapp Rubber Co., Boston, Mass.
W. C. Coleman Co., Boston.
Continental Rubber Works, Erie, Pa.
Danversport Rubber Co., Boston.
Eastern Rubber Co., New York.
Harmer R. Rec.Wks., E. Millstone, N. J.
Manufactured Rub. Co., Phila., Pa.
New Jersey Rubber Co., Lambertville, N. J.

Pequannoc Rubber Co., Butler, N. J.
Philadelphia Rubber Works, Philadelphia.
Stockton Rubber Co., Stockton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
S. L. Rubber Co., Chester, Pa.
United Rubber Co., Akron, O.
U. S. Rubber Reclaiming Works, N. Y.
Westmoreland Rubber Mfg. Co., Grapeville, Pa.

Agents and Dealers.

Philip McGroarty, Trenton, N. J.
H. P. Moorhouse, Paris, France.
Rubber Trading Co., New York-Boston.

Rubber Flux.

Massachusetts Chemical Co., Walpole, Mass.

Rubber Makers, White.

Grasselli Chemical Co., N. Y.
Scrap Rubber.
Bers & Co., Philadelphia.
S. Birkenstein & Sons, Chicago.
W. C. Coleman Co., Boston.
Wm. H. Cummings & Sons, New York.
Elsermann, Wm., New York.
Gordon, Jas., Trenton, N. J.
Theodore Hoteller & Co., Buffalo, N. Y.
M. Kaufman, Chicago.
B. Loewenthal & Co., New York and Chicago.

Philip McGroarty, Trenton, N. J.
Millard, Geo. F., Clyde, N. Y.
E. F. Norton & Co., Chicago.
M. Norton & Co., Charlestown, Mass.
Roenthal, H. A., Trenton, N. J.
J. Schnurmanner, London.
Trenton Scrap Rubber Supply Co., Trenton, N. J.

M. J. Wolpert, Odessa, Russia.

Substitute.

T. C. Ashley & Co., Boston.
Joseph Cantor, New York.
Carter, Bell Mfg. Co., New York.
Corn Products Refining Co., New York.
Katsenbach & Bullock Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
The Pierce Co., E. Rochester, N. Y.
The Rubber Chemical Co., Birmingham, England.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Tyske & King, London, England.
Wing & Co., C. S. Wollaston, Mass.

Sulphur.

Battelle & Benwick, New York.

T. & S. C. White Co., New York.

Sulphur Chloride.

Katsenbach & Bullock Co., Trenton, N. J.
William H. Scheel, New York.
George W. Speaight, New York.
Stamford (Conn.) Rubber Supply Co.

Tripoli.

American Tripoli Co., Seneca, Mo.
Oxford-Tripoli Co., Ltd., N. Y.

Waxes.

American Wax Co., Boston.

Whiting.

H. F. Taintor Mfg. Co., New York.

Zinc, Oxide of.

New Jersey Zinc Co., New York.

Zinc Substitute.

Aluminum Flake Co., Akron, O.

Zinc Sulphide.

Joseph Cantor, New York.
Tyske & King, London, England.

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Fabrics.

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National India Rubber Co., Bristol, R. I.
J. Spencer Turner Co., New York.

Insulated Wires.

The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.
National India Rubber Co., Bristol, R. I.

Mats, Automobile.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co., Cambridge, Mass.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.

Revere Rubber Co., Boston, Mass.

Repair Stock.

Continental Rubber Works, Erie, Pa.
Manhattan Rubber Mfg. Co., Passaic, N. J.
Mattson Rubber Co., Lodi, N. J.
N. J. Car Spring & Rubber Co., Jersey City, N. J.

Thermoid Rubber Co., Trenton, N. J.

Rims, Wheel.

Goodrich Co., B. F., Akron, Ohio.

Tires.

Bailey & Co., C. J., Boston, Mass.
Canadian Rubber Co., of Montreal, Ltd.
Continental Rubber Works, Erie, Pa.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Goodrich Co., B. F., Akron, Ohio.
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Kokomo Rubber Co., Kokomo, Ind.
Mattson Rubber Co., Lodi, N. J.
Morgan & Wright, Detroit, Mich.
N. J. Car Spring & Rubber Co., Jersey City, N. J.

Pirelli & Co., Milan, Italy.
Springfield Tire & Rubber Co., Springfield, O.

Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, Ohio.
Thermoid Rubber Co., Trenton, N. J.

Automobile and Carriage.

Ajax-Grieb Pub. Co., Trenton, N. J.
Boston Belting Co., Boston-New York.
McGraw Tire & R. Co., E. Palestine, O.
Revere Rubber Co., Boston-New York.

Tire Fabrics.

Lane & Co., J. H., New York.
J. Spencer Turner Co., New York.

Tire Repairing.

Voorhees Rubber Mfg. Co., Jersey City, N. J.

Treads.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co., Cambridge, Mass.
Manhattan Rubber Mfg. Co., New York.
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